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ORIGINAL ARTICLES.

THE SUBIODIDE OF BISMUTH IN THE TREATMENT OF ULCERATIONS.

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IN 1876, while resident physician in the Presbyterian Hospital of Philadelphia, I devoted considerable time and attention to the study and treatment of wounds and ulcerations, and to experiments directed to the modification of the tegumental tissues in repair, to obtain, if possible, more rapid and more normal cutification or cicatrization than was common.

Having been granted unusual facilities to pursue these studies during my service, I was enabled to have constantly under my care and observation a great variety of chronic ulcerations.

Skin grafting was then fashionable, iodoform was the popular dry dressing, and subnitrate of bismuth was in common use.

Among a number of new preparations sent to the Hospital for trial, with no claims for therapeutic value, was the "subiodide of bismuth," made by R. A. Fairthorn, an experimental chemist of Philadelphia at that time.

The chemical affinities of the new salt with the subnitrate and iodoform suggested its use for its supposed alterative and sedative properties. It was at once seen that it not only met my expectations, but that its action in some unexplained way was simply marvellous. Ulcers which had previously defied all treatment, seemed to yield at once to its influence.

In the face of my evident successes, it was said that either my cases were "easy ones," or that the coincident treatment and favorable surroundings were the secret of success.

As a test case, an inmate of the Philadelphia Hospital who had an ulcer that had resisted all treatment for over ten years, and who had finally been pronounced incurable, was, by permission, transferred to the Presbyterian Hospital for treatment. His was the worst case of atrophic ulcer I have ever seen; the leg was little but skin and bone, and looked as if a few hours might make it an elegant dry specimen for the museum. Under the use of the subiodide of bismuth alone, he was returned cured in three weeks.

The subiodide was then introduced into the Philadelphia Hospital, and received the highest praise; but its use was discontinued shortly afterward because it was "too expensive."

The new preparation never became popular; no therapeutic claims were ever made for it so far as I know; it was not generally introduced, and its manufacture was stopped soon after.

Personally I have continued its use for chronic ulcerations during the past ten years, and of late have discovered such additional properties as will make it a valuable addition to the materia medica, and the armamentarium of the surgeon. It will control inflammation, allay irritation, suppress suppuration, promote granulation, and induce cicatrization. It has been found to be almost a specific in gonorrhœa, in various septic and specific mucous inflammations, oral and nasal catarrhs, ophthalmias, etc., in chancroids, rectal ulcers, etc., and in the various cachectic and dyscrasic ulcerations.

Internally it is strongly recommended in gastric ulcer, gastritis, and in typhoid fever.

Its therapeutic and physical properties may be summarized as follows:

a. It subdues the inflammatory process.

b. It substitutes the inflammatory regeneration of tissue with a neoplastic force, which closely simulates normal embryonic histogenesis.

c. It is, by its action, *a vital aseptic.*

d. It prevents the formation of pus.

e. It lessens direct and reflex irritability.

f. It is so bland and unirritating that it can be used on any surface.

The subiodide of bismuth, by virtue of these properties, is almost a specific for ulceration.

There are certain kinds and conditions of acute and chronic ulceration which may require special treatment, preliminary to or coincident with the use of the subiodide of bismuth.

The asthenic or œdematous ulcer; the congested, the inflamed, the irritable, and the readily bleeding ulcer; the ulcer with exuberant or fungous granulations; the cachectic, the varicose, the phagedenic, and sloughing ulcer; the ulcer with callous edges; the eczematous, syphilitic, scorbutic, scrofulous, lupoid, and cancerous ulcerations: all may require some radical or specific treatment to convert them to a simple form of ulcer, or to remove pathological elements which would retard or impair healthy tissue formation.

Particularly should attention be directed toward restoring a normal condition of the cutis and its accessories. Varices may be compressed or obliterated by other means; œdema, congestion, or inflammation controlled by position and rest; nodules of specific character, as in lupus, rodent ulcer, etc., ablated with caustic potassa; the irritable ulcer allayed with chloral; the errhytic or readily bleeding ulcer blanched with a five per cent. powder of salicylic acid; exuberant granulations resolved with bromide of potassium; the callous edges cut down with salicylic acid or the knife; phagedena and slough controlled with caustics or chlorine; the atonic bases of syphilitic ulcers stimulated with nascent iodide of mercury, etc. These or other

accessories may be required, but in a great majority of cases the subiodide of bismuth alone will prove sufficient.

The action of subiodide of bismuth on an ulcerating surface is presumably as follows: Iodine acts upon granulation tissues, inducing an increase of all normal physiological processes (Schede, *Arch. f. klin. Chir.*, 1882, xv. p. 14); it produces a protoplasmic energy ordinarily obtained only by congestion, hyperæmia, or inflammation, and induces a reversion of the tissues to an embryonic state. It imparts a formative impulse or force to the cellular elements of the three germinal or blastodermic layers and their derivatives, which closely approximates to the laws of normal development. Its specific action as an alterative in certain dyscrasiæ is also a valuable factor. Iodine ranks high as an antiseptic agent, having power to inhibit germ development, being efficient in the proportion (minimum) of 1 to 4000.[1]

The bismuth unites with the albumen, forming an albuminate, which acts as a sedative, aseptic, impermeable coating on the granulations; retarding evaporation of the cellular moisture; modifying the formation of striated connective tissue from the gelatinous intercellular substance, and preventing the retrograde metamorphosis of the white blood-corpuscles. Its oxygen may play some chemico-vital part in the process, possibly in its nascent state as an aseptic.

They simply oxidize the deoxidized pus, rendering it an unfit soil for septic germs, and possibly feed the struggling tissues enough oxygen to promote granulation.

Under the use of the subiodide of bismuth ulcers, which usually heal by cicatrization at the rate of one-half to one line per day, have been seen to dermatize at the rate of three to five lines per day. The cicatrix is fleshy and firm, and is but little disposed to destructive inflammations or subsequent alterations, even over syphilitic sores.

The shape of the ulcer seems to be no obstacle to the process of cutification, circular healing as rapidly as linear or oval ulcers.

The formative force does not seem to diminish as the centre is approached, thus differing from common healing, and indicating that the process is not one especially of stimulation, but a truly regenerative force imparted to the tissue elements. Surfaces denuded by gaping after division of cicatrices will rapidly heal under its use.

Its utility, in my observation, has in no instances been more forcibly shown than in cases of indolent ulcers, where, to save time, I have used it only on the centre of the sore while the edges were undergoing some preparatory treatment; active germination of the peripheral cutis having been observed to commence before the morbid epiderm began to show any improvement. The same phenomenon has been observed with skin grafts.

Subiodide of bismuth then, in ulceration, appears to be, if not a true specific, at least a decided chemico-vital adjunct to tissue repair. By its manifest virtues and properties, and its entire freedom from any objectionable features, it will bear comparison with any therapeutic agent or system.

Subnitrate of bismuth, iodoform, oxide of zinc, burnt alum, clay, "mineral earth," etc., have been lauded as perfect dry dressings. Each has its virtues, and each its faults.

Subnitrate of bismuth, from liberation of nitrous acid or from contamination with arsenic, is to some degree aseptic, but it is not free from danger by absorption, having been known to cause enteritis, nephritis, and gangrenous stomatitis.

Iodoform also is credited with numerous toxic sequences from absorption, and is objectionable on account of its odor.

In the subiodide of bismuth, we have a perfect dry dressing; it is bland, unirritating, and, if absorbed at all, has never yet proved injurious; it supports life, promotes nutrition, and maintains the integrity of the tissues—hence it is a *vital aseptic*. It is probably an "inhibitory antiseptic,"[1] being potent in holding in check the development of pathogenic germs by sterilization of the tissues and their discharges. It gives physiological rest by restoring the functional relations of cell life, and it makes the work of repair a passive process.

In the following description of its use I have followed the treatment of a bad case. In many cases I have known a single application entirely to heal ulcers that had long resisted treatment by other means.

My usual proceeding in a case of chronic leg ulcer is as follows: I first thoroughly wash and cleanse the face of the ulcer, removing all slough, shreds of tissue, foreign matter, etc. I then disinfect it well, generally with solution of acetate of aluminium, *q. v.*, and then dry the surface of the ulcer and the surrounding parts. The granulations are then dusted with, or the ulcer packed with the subiodide of bismuth, alone or in combination, or with whatever powder may be indicated by the exigencies of the case. Calomel, salicylic acid, and bromide of potassium, I have found very useful. I then, while holding the limb vertically to drain it (the patient on his back), firmly strap it with adhesive plaster from below upward. The straps should be about one inch wide, and are applied as a spica, nearly surrounding the leg, and extending an inch or more above and below any œdematous or congested part. A firm bandage is then applied, including the foot, and the patient is allowed to go about as usual. This dressing, according to circumstances, may be allowed to remain from one to four days, and it may or may not need renewal.

When in proper condition—that is, when the ulcer has assumed a healthy aspect—the remainder of the treatment is simply to dust the granulations with the subiodide, protect with a Maltese cross or perforated square of plaster, cover with a thin layer of absorbent cotton, and again apply the bandage firmly.

These dressings should be renewed in from two to five days, when the limb may be gently rubbed to stimulate the circulation, or the patient may be al-

[1] Sternberg, table, American Journal of the Medical Sciences, April, 1883.

[1] Lister, British Medical Journal, October 25, 1884, p. 804.

lowed to stand or walk about for a few minutes without the bandage.

In removing the dressings I use no force to dislodge any of the powder which may have dried on the surface or about the edges; but I generally douche the granulations with diluted alcohol or the solution of acetate of aluminium.[1] In some cases the ulcer is not washed at all from the beginning to the end of treatment, any moisture or discharge being lightly sopped off with absorbent cotton.

If the surrounding skin shows any irritation from the plaster or from pressure, I dust the part with the subiodide and smear the surface with Goulard's cerate.

Strapping and bandaging, as used by me, are simply valuable adjuncts to secure physical rest to the parts; on other parts of the body pressure is seldom required.

In gaping wounds with no loss of tissue, after drying and dusting with the subiodide, I use the extraneous ligature; that is, the parts are approximated and held in position by lacing together the free edges of parallel strips of perforated or porous plaster. The edges of such wounds are generally covered with a strip of lint saturated with the compound tincture of benzoin. It is surprising how often by these means such wounds will heal by first intention.

In recent wounds and acute ulcerations, the dressings should be less frequent than in chronic cases.

Proper diagnosis of the individual characteristics of ulcers and specific therapeutics of special indications, will certainly influence the results; and these must depend upon the judgment of the surgeon.

If the subiodide of bismuth is used properly, the prognosis in every case may be "certain cure in half the time, and with far better results than can be obtained by any other treatment."

The prescription price of the subiodide of bismuth is from twenty to twenty-five cents per drachm, and as it is dusted on or used freely, it will require from a drachm to an ounce to effect a cure in an ordinary case of leg ulcer; so it is comparatively inexpensive.

Subiodide of bismuth has been used in the treatment of gonorrhœa with the greatest success. (Bis. subiod. gr. xx: glycerin et. aq. āā ʒiv, as an injection.) I would suggest that it would do better used dry, if the urethra could be rendered patulous; or it may be used in the form of a soluble bougie.

It has been used successfully in rectal ulcerations (bis. subiod. ʒj, unguent, ʒj), applied with an ointment syringe.

It is highly recommended for internal use (gr. v–x ad. glycerin ʒj, t. i. d. or p. r. n.) in gastric ulcer, intestinal irritations, and in typhoid fever; for gastric ulcers or intestinal irritations it should precede food at least an hour.

Many other local and general uses of the new drug might be suggested: it has properties which deserve therapeutic investigation and application, and which should appeal to the profession for extended use.

I would be pleased to answer any inquiries regarding it, or to hear from any one of its use and results.

[1] Sol. acetate of aluminium: ℞. Alum. sulph., gr. 198; plumbi acet., gr. 446; aq. ℥xvj=sol. aluminii acet., gr. x ad. ℥j—the proper strength for use.

Until recently, the subiodide of bismuth has practically been out of the market. It is at present manufactured by Dr. Charles G. Frowert, Twelfth and Vine Streets. The original preparation was variable in color and not entirely free from some irritating foreign substance in crystalline form.

The subiodide or oxyiodide of bismuth is produced, as an insoluble precipitate, in the reaction between KI and BiO,NO_3 in the presence of HCl. It is a heavy, amorphous, impalpable powder, of a bright red color, odorless and almost tasteless; it is neutral in reaction, and perfectly insoluble in water, alcohol, or ether. Sp. gr. 6.73. It contains, as its formula indicates, BiOI: Bi 208, O 16, I 127 parts in every 351, or an equivalent of nearly one grain of iodine in every three grains of the subiodide.

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ARTHRITIS DEFORMANS.[1]

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Arthritis deformans was not recognized as a distinct disease by the ancients, but was confounded with chronic articular rheumatism and gout. We find, for instance, in the "Satyres and Epistles" of Horace, in the works of Martialus, Celsus, and other writers, references to the disease chiragra (finger gout), which there is every reason to believe was arthritis deformans. Aretæus, in fact, faithfully describes the affection under this title. But any uncertainty that might now remain of its existence at the time of these writings, or even before it, has been removed by the exhumation of bones, bearing the characteristic deformities, in the ruins of Pompeii, in the catacombs of Paris, and in an ancient monastery at Pomerania. Sydenham, in 1766, wrote the first accurate description of the disease, but failed to identify it as an independent malady, considering it a variety of rheumatism. Landre-Bouvais, of France, in 1800, and Heberden and Haygarth, of England, a few years later, described, under the title "nodosities of the joints," the polyarticular variety, distinguishing it from both gout and rheumatism. Brodie, Chomel, Aston-Key, and others mentioned the monarticular form of the disease, but Adams, Colles, and R. W. Smith, of Ireland, were the first to describe it minutely, especially as it occurs in the hip (morbus coxæ senilis). It remained, however, for German investigators (Rokitansky, Förster, Virchow, Volkmann) to study the morbid histology of the affection, and to demonstrate that the lesions attending the two varieties of the affection are identical. We are indebted to Charcot for the best classification of the disease, namely: 1. The polyarticular or general form. 2. The monarticular or partial. 3. Heberden's nodosities.

Symptoms.—Arthritis deformans is an essentially chronic affection, advancing slowly, and continuing indefinitely. Yet the most chronic cases are frequently attended by an occasional acute paroxysm,

[1] Read before the Cincinnati Academy of Medicine, September 6, 1886.

and in a certain, rather small proportion of cases, the onset is sudden and violent. In either instance, the symptoms may closely resemble those of a mild attack of acute articular rheumatism.

The general and partial varieties of the disease have few features in common. The former is usually symmetrical, invades by preference the smaller joints (fingers and toes), and appears coincidently in corresponding joints of the opposite limbs. The monarticular or oligarticular variety is generally confined to one or a few of the larger joints (hip, knee, shoulder, elbow, spine). The former is a disease of early or middle life, much more frequent in the female sex; the latter is observed for the most part in the aged and decrepit of both sexes.

The variety described by Heberden is probably the same disease modified by constitutional peculiarities, natural or acquired. The disease presents most of the features of arthritis deformans, both in its choice of subjects and in the appearance of the affected joints, but is peculiar in that it seldom leaves the articulation first affected, and that it seldom or never develops in any but gouty individuals.

The individual who is about to become the victim of arthritis deformans usually first observes a numbness and stiffness of the joints, most frequently of the metacarpo-phalangeal articulations of the index and middle fingers. These then become slightly swollen, painful, and hot. The pain is often intense, is generally spasmodic and worst at night, is aggravated by pressure and still more so by motion of the affected joint, and becomes almost unbearable during the acute paroxysms of the disease. The attack lasts but a few days, however, and subsides often without treatment, or under home remedies. Several attacks of this character usually occur at intervals of from a week to a month or more, one or several additional articulations becoming at each time involved, and the enlargement and deformity of the previously affected joints becoming with each paroxysm more permanent, until immobility and apparent dislocation result. The disease when situated in the upper extremities advances, as a rule, in a centripetal direction, from the fingers to the shoulders; but in the lower extremities it frequently pursues a reverse course, beginning at the knees. The disease has its remissions, but no regression. With its advance the progressive deformity and immobility of the joints increase, and the individual becomes more and more disabled, his muscles atrophy from disuse, his general strength fails from want of exercise, until he becomes, in the worst cases, utterly helpless—helpless on account of his deformities, however, more than from actual suffering, although it is seldom that pain is long absent from the affected members. Motion of the joint is frequently attended by a creaking or a grating crepitus that is both heard and felt. These are the individuals too, whose bones do barometric service in foretelling changes of the weather. The pain to which I have referred is not always confined to the affected joint, but frequently invades the muscles and nerves of the entire limb, especially when the disease is located in the lower extremities. Last winter I treated a case of arthritis of the shoulder of five months duration, in a woman about fifty, who was confined to her bed and had to rest her arm on a pillow, the limb being so exceedingly sensitive and painful that morphia had to be administered at regular intervals until the more severe symptoms had subsided. Such myalgic and neuralgic pains frequently precede for a variable time the articular inflammation, and sometimes persist for a long time after the disease has apparently subsided. A case that recently came under my observation had suffered for two years from a violent sciatica before the arthritis of the hip was recognized by the characteristic crepitus. A consequent rigidity of the affected muscles is further an important factor in the production of deformity. Notwithstanding the suffering that is often endured by these individuals, the nutritive functions are usually well performed, and in mild cases the general health is maintained.

The deformity which results from arthritis deformans is best studied in the hand. Sydenham said the joints of the fingers appeared to be turned over. Such is usually the appearance of at least the first phalangeal articulation, and this with the moderate flexing of the metacarpo-phalangeal and second phalangeal joints, the epiphyseal enlargement, and the wasting of the interosseous muscles, gives the fingers a peculiar conical, or in some cases a claw-like appearance. Fortunately the thumb often escapes, and when attacked is usually flexed toward the palm. The deformity of other joints need not detain us. The spinal column becomes distorted at a time when compensatory curvature does not take place. The shoulder, hip, knee, and elbow, from long resting in the position which secures for them the greatest immunity from pain, become fixed and render the limb useless and a burden. But probably the most lamentable case is that in which the temporo-maxillary articulation becomes immobile.

Complications seldom arise in the course of this disease, but asthma, pericarditis, endocarditis, pleurisy, hemicrania, such cutaneous diseases as psoriasis and lichen, and various cerebral and spinal affections have been reported in connection with it. They are as a rule, I think, merely coincident, although their occurrence is undoubtedly due, in many cases, to the attendant impoverished state of the system. Pericarditis and endocarditis, when they occur, can usually be traced to a precedent or an intercurrent attack of acute articular rheumatism. The affection has little or no influence on the duration of life, and the patient generally lives to die of cerebral hemorrhage, pneumonia, or other disease incident to old age.

Etiology.—The causes of arthritis deformans are obscure, and such must of necessity be the case until we shall have acquired more definite knowledge of the nature of the disease. To say that it occurs spontaneously or without a definite cause is merely to evade the point at issue, and contrary to all analogy. The polyarticular form of the affection occurs most frequently in females between twenty and thirty years of age. The occurrence of frequent pregnancies or of menstrual disorders and prolonged lactation have been observed as frequent antecedents of the disease, and have, therefore, been considered important

etiological factors. The belief in such relationship is strengthened by Fuller's eleven cases in girls under eighteen, ten of whom had suffered from various menstrual disorders, and probably also by its frequency about the time of the menopause. That these influences are only predisponent, and in no way essential, is abundantly demonstrated by the occurrence of the disease in males and in females not the subjects of disease.

Gout was once supposed to be closely related to the disease, but at present there are none who hold that it bears more than an indirect relationship to it. Arthritis occurs in gouty subjects, and has been observed coincident to it; but there is little similarity between the two diseases in their purity. Charcot, Trastour, and others have observed a hereditary transmission of arthritis deformans from gouty parents, but not many such cases are on record.

That acute articular rheumatism bears at least so much as a hereditary influence upon arthritis deformans is held by some. Others maintain that it directly predisposes to it or produces it. The occasionally acute onset of the disease, with its amenability to the same remedy, and its liability to recur, favor this view; but there should be little question of the non-identity of the two affections, for in the nodular arthritis the elevation of temperature and other indications of constitutional disturbance are less marked, and there is an absence of the profuse perspiration, the tendency to rapid migration, and the cardiac complications so characteristic of the acute affection.

That the disease is a variety of chronic articular rheumatism, as was once thought, is no longer tenable. Chronic articular rheumatism is frequently of long duration, and may lead to impairment of motion; but its point of origin and course are usually different from those of the nodular disease, and it is not usually symmetrical. The last distinction is of importance if the observations of Cazalis be true that two-thirds of the cases of chronic rheumatism are unilateral. That the latter predisposes to the nodular disease there is no reason to deny, although the fact has not been established. Gonorrhœal rheumatism has closely preceded the deforming arthritis, and is considered by Ord, Hutchinson, and others, a variety of the latter affection. A great difficulty in the way of all these views is the fact that many other diseases have preceded the affection with almost or quite the same frequency as have rheumatic diseases. Tuberculosis and its neighbor, scrofula, bear probably a much less important relation to the affection, although Cornil, Charcot, and Fuller regard them as frequent antecedents with somewhat of a causative relation. Such other factors as poverty, with its insufficient or improper food and clothing, grief, anxiety, etc., need not detain us. But a prolonged residence in cold, damp, and badly ventilated dwellings, is recognized as one of the most frequent exciting causes of the disease, which does not always appear, however, until long subsequent to such exposure. Direct injury, a blow, a fall, or a fracture, is named as an occasional cause of the polyarticular form of the disease, and is probably the most common exciting cause of the monarticular variety.

A tropho-neurotic origin has been sought, Remak and Benedikt, among others, regarding the affection as a result of irritative states of the spinal cord and the sympathetic. Remak named the disease arthritis myelitico-neurotica. This theory obtains its chief support from the fact that an arthritic affection sometimes accompanies lesions of the nervous system, notably locomotor ataxia, as described by Charcot, and from its usual symmetry. The analogy between arthritis deformans and the bone lesions of locomotor ataxia are hardly apparent. The diseases develop under different circumstances and produce contrary results. The joint lesions of locomotor ataxia commence in the bone, are atrophic, and generally painless, are acute, and produce preternatural mobility rather than fixation of the joint; and, in addition to this, they develop in the presence of the characteristic manifestations of locomotor ataxia. Deforming arthritis, if the result of irritative states of the nervous system, is anomalous in being as a rule the only manifestation of such condition. Still the fact that joint lesions of another character may result from spinal disease, forbids the exclusion of nervous influence from the etiology of this affection, especially in view of the fact that so many nerve lesions leave no recognizable traces after death.

One other possible cause remains to be considered. This is the possibility of the disease having its origin in the action of microörganisms. The question has received only the most transient notice from recent authors, and little or no investigation of it has been made; but the recent discovery by various observers of microörganisms in a number of chronic diseases in which their presence had been persistently denied, renders the subject worthy of consideration. There are certain features of the disease which lend support to the supposition of such a cause. It is a well-known fact that arthritis deformans frequently follows an injury, that it frequently attacks joints that have previously been inflamed, and that in nearly all cases it develops in individuals whose bloodvessel walls are almost of necessity impaired by anæmia, malnutrition, hemorrhage, prolonged lactation, or actual disease—all of these conditions favoring the growth of germs. These facts are sufficient, I think, to indicate the desirability of research in this direction.

On the other hand, there is much to contraindicate the possibility of a mycotic origin in this disease. It is not attended by a cachexia, it does not directly affect the duration of life, it is during a greater part of its course afebrile, and it is not to all appearances contagious or infectious. I do not believe, therefore, that it is admissible, in the present state of our knowledge, to do more than to submit the three following essential factors in the etiology of the disease: First, a hereditary tendency or an impoverished state of the general system; second, a derangement of the local blood supply, probably of a tropho-neurotic origin; and, third, a directly exciting cause, as a trauma.

Pathology.—Arthritis deformans is a chronic inflammation of the articular cartilages of the joints. The process first manifests itself in an irritated state of the articular surfaces of the cartilages, but all the component tissues of the articulation soon become

congested. The synovial membrane becomes thickened and opaque, the fringes enlarged, and the villi elongated and thickened. The increased nutrition soon leads to a proliferation of cartilage cells, new cells having distinct walls forming within the membrane of the original or mother cell. Sacs or pouches of considerable size are thus formed throughout the substance of the cartilage. Owing to the pressure of articular contact, the sacs immediately upon the surface of the cartilage rupture and discharge their contents into the cavity of the joint. By a similar rupture and evacuation of distended cell-membranes beneath, the cartilage soon acquires a ragged or excavated appearance. The matrix substance becomes fibrillated and split into shreds. Fatty degeneration ensues, and causes the removal of the articular portion of the cartilage by absorption. At first there is a slight increase of synovial fluid, but later the joint becomes dry. Before this stage has been reached, however, the underlying bone has taken on a formative inflammation, fortifying itself as it were, by a thickening of its compact layer. After the removal of the articular portion of the cartilage, these compact surfaces of bone are permitted to come in contact, and by their constant attrition, become smoothly polished. Although the process is the same in all parts of the articular cartilage, the result in the peripheral zone is quite different from that just described. Here the distended cell-membranes are prevented from rupturing by the synovial membrane. The few cartilage cells normally found in the synovial fringes also proliferate. In this way new cartilage is formed in which calcareous particles are soon deposited and the process of ossification takes place, and a more or less nodular rim is formed around the articular heads of the bones. In some cases these nodules are attached by small pedicles, which fracture, and thus are formed the movable bodies occasionally found in the joint. In protracted cases the inflammation may extend to the periosteum and to tendons in or around the articulation, and we have in the one case the formation of new bone, in the other, a calcification of the tendons. Sometimes in very aged subjects a rarefying ostitis develops in the denuded ends of the bones and causes a still more extensive destruction. Tendons also which have become calcified are sometimes removed by absorption. The locking of the joints is rarely the result of true ankylosis, but is rather due to the encroachment of the nodosities upon the shaft of the bone or to the interlocking of osteophytes. The muscles that are thrown into disuse undergo fatty degeneration. The result of search for the cause of the disease has been for the most part negative.

Treatment.—The unsatisfactory results obtained from all methods of treating arthritis deformans are almost proverbial. That the disease is in a measure amenable to proper treatment, however, has been abundantly demonstrated. The systematic treatment resolves itself into three classes: first, the prophylactic, or the meeting of causal indications; second, the treatment of the acute stage; and third, the treatment of the intervals of chronicity. The first indication, therefore, is to search for the cause or any influences that may predispose to the disease, and if possible to remove or counteract them. Anæmia, malnutrition, menstrual disorders, and even such affections as are not usually considered related to the disease, but are known to be in any way capable of debilitating the constitution of the patient, should be treated. The use of iron, arsenic, cod-liver oil, and tonics is here indicated. A change of residence from a swampy to a dry locality, or from above a damp cellar to well-ventilated apartments in many cases will be followed by the most gratifying results. In the treatment of the acute attack, the patient should be confined to bed, the affected parts elevated and placed in the most comfortable position attainable. Hot or cold applications may be made if not painful. The salicylate of sodium is the only remedy which has proved of real benefit, and should be given in large doses (at least fifteen grains every three hours), until its full physiological effects are produced, and even then its administration should be carefully continued for a month or more after the attack has subsided. The remedy does not act with the promptness that attends its administration in acute articular rheumatism, but should not therefore be abandoned without a persistent trial. Anodynes, especially opiates, must be used with caution, because of the difficulty with which their use is discontinued.

Iodine is the only remedy which has acquired a reputation in the treatment of the chronic periods of the disease. It may be administered in any of the officinal forms, the tincture, the compound solution, or in combination with potassium or sodium. It should be given with regularity and perseverance. Small doses, two or three drops of the tincture or solution, or five grains of the iodides, thrice daily, well diluted, are to be employed during the first week, when they may be gradually increased to three or four times this amount. The local use of iodine is also recommended, either in the form of the tincture or a salve rubbed into the integument over the affected parts. Hot fomentations, poultices, and warm flannels are frequently useful both for the relief of pain and for the reduction of inflammation, but heat is not always agreeable. Warm baths (100° to 110° F.) are highly recommended. Medicated water and peat baths have also been lauded, but their sole virtue doubtless lies in their temperature. One other measure is of the utmost importance, and should be insisted upon, the more because of the fact that it is so frequently neglected. I refer to the regular, perseverant exercise of the affected joints at all times except during the febrile stages of the disease. Where the joint is very sensitive only the most gradual passive motion can at first be tolerated, but less limited movements will soon be yielded to. The object of this procedure is to stimulate the secretion of the synovial fluid, and thus prevent in a measure, at least, the eburnation and final rarefaction of the joint surfaces. It also aids in the prevention of the pseudo-ankylosis. I have seen marked benefit in a case after two months forced exercise of a joint thus affected without any other treatment. Finally, if there is any one feature of the treatment that is above all others essential, it is perseverance.

SOME RECENT INVESTIGATIONS CONCERNING BACTERIA IN DRINKING WATER.

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THE testing of drinking water as to its germ life, according to the method first suggested by R. Koch, has proved, in many cases, of great value in supplementing the chemical analysis. In fact, many of those prominent in matters pertaining to public hygiene are inclined to place more faith upon the estimation of the number of bacteria in a given quantity of water than upon the determination of chlorides and of those chemical elements, such as ammonia, nitrites and nitrates, which are usually looked upon as the products of bacterial life.

The German Imperial Health Office seems to be well aware that this method needs careful elaboration and abundant statistical material before it can be placed upon a firm basis, and before the interpretation of its results can be considered reliable. There are, moreover, many important collateral questions which must be solved before this point is reached. There are now published in the first volume of the *Arbeiten a. d. Kais. Gesundheitsamt*, three separate articles, extending and applying the gelatine plate method in endeavoring to get at the true signification of microörganisms in water. The first publication (p. 1) furnishes statistics of the chemical and bacteriological constituents of Berlin drinking water.

These tables point out very clearly the efficiency of filtration in removing the great majority of bacteria from the water, and in reducing the quantity of the chemical constituents. They also indicate the great variation which the number of bacteria may undergo in water derived from flowing streams and rivers. Thus the maximum number of bacteria contained in unfiltered water from the river Spree, in the month of March, was 5115, the minimum 936; in October, the maximum and minimum were respectively 8316 and 528.

In my own examinations of Potomac water, in part published elsewhere,[1] the number of bacteria would reach 3000 after heavy rains, and descend within a few weeks to about 300. In every case, the number of bacteria would grow *pari passu* with the turbidity of the water, indicating a washing into the stream, with the suspended matter, of the bacteria themselves, while the smaller number found in the settled water led me to infer the presence of a very small quantity of organic matter in solution. These facts force us not to rely upon one, or even a few examinations in estimating the average germ life of a given water, and from this deduce its healthfulness. Another fact brought out by these statistics, is the great value of Koch's method in determining the efficiency of filtration. This has been well shown by Frankland, and others. The method enables us to test, not merely the efficiency of a given filtering material or apparatus, but the length of time during which such a filter remains efficient. That this is a most important factor, is shown by the following statistics.[1] Water drawn in a Berlin kitchen, through a private filter, contained 3840 bacteria; the filter being removed, it contained only 35. A second examination furnished the same results, 4500 with the filter, 56 without it. To indicate the efficiency of sand filtration, used in Berlin, the following figures may be of interest. In July, 1884, about 75 per cent. of the bacteria were removed by filtration; in August, 80 per cent.; in September, 97 per cent.; in November, 42 per cent., etc.

Koch established, and made comparatively simple, the estimation of the number of microörganisms in water. But the signification of the number and kind of bacteria still remains to be determined. It may be safely assumed that the number of bacteria is a measure of organic contamination, and that the introduction of saprophytic bacteria into streams from polluted sources, may be taken as a broad indication that pathogenic bacteria, whenever present, will gain entrance through the same channels.

In order to see what relation subsists between the quality of drinking water, as indicated by taste, and by chemical analysis, another series of figures are published under the direction of Dr. Wolffhügel.[2] These statistics, collected from various cities in Germany and Austria, and compiled by various observers, do not indicate the perfect concordance between biological analysis and former estimation of quality which those would wish to see, who have looked upon this method as more satisfactory than chemical analysis. Moreover, in the reports from some cities, the bacteriological estimates of the water from various pumps which have been condemned as unfit for use on the evidence furnished by chemical analysis, show in the main a low percentage of bacteria when compared with others regarded as fit for drinking water. Thus, on page 556, we find the water of two condemned pumps containing, respectively, 11 and 71 bacteria in 1 c.c., while that of another, not condemned, is put down as containing 1485 bacteria in 1 c. c.

These discrepancies may, however, be only apparent, when we consider that, in but a few cases, two or three examinations of water from the same source were made. These examinations, in most cases, show a close agreement in the figures; in a few, the difference is very marked. Thus (p. 554), two examinations, made about a month apart, describe the bacteria as too numerous to be counted in the first case, and but 63 in the second.

From these statistics, it would appear that, in the majority of the sources receiving their supply either from ground water or spring water, the bacteria number less than 200 in 1 c. c., a small proportion reach the number 500 to 600, while a few go as high as 2000 to 5000. In connection with these statistics, Dr. Wolffhügel reserves for himself some general deductions, to be published later. Meanwhile, in order to swell the material on which conclusions may be based, it would be advisable for those practically interested to confine their examina-

[1] American Monthly Micr. Journ., 1886, p. 61.

[1] Arbeiten, etc., p. 562.
[2] Loc. cit., p. 546.

tions to variations in the number of germs in a few sources of drinking water, rather than examine a large number but once or twice. In this way the effect of the seasons, of rainfall and drought may be watched. Nor is the effect on the number of bacteria of a prolonged exhaustion of water in ordinary pumps to be overlooked.

In a third article,[1] two questions are approached from the experimental side: To what extent do pathogenic bacteria multiply in water? To what extent do bacteria multiply in samples of water after collection and before examination? In regard to the second question, the authors conclude that bacteria do increase in number within certain limits of temperature, and that water packed in ice shows a gradual decrease in the number of bacteria capable of development. Hence the necessity of examining water immediately after it has been collected, in order to avoid any errors. The great increase in the number of bacteria of drinking water after collection is a fact coming under the observation of all who have paid any attention to the subject. I, at first, suspected that the biologically sterile tube might not be chemically clean, and hence exposed the tube to the Bunsen flame until all organic matter was carbonized or broken up. This, however, did not prevent a few thousand bacteria from increasing to over sixty thousand within twenty-four hours. The changed conditions are such as to make all other organisms a prey to bacteria. The authors have also found that the manner in which the collecting tube is closed affects the diminution of the number when exposed to cold, so that tubes with rubber stoppers contained, on the average, less than those plugged with cotton-wool. This, without doubt, depends on the oxygen supply. Experiments on the effect of mechanical disturbance, such as might occur in the transportation of samples, led to no uniform results.

In endeavoring to solve the first question stated above, how extensively pathogenic bacteria are capable of multiplication, the authors sterilized filtered and unfiltered water from various sources, including river, well water, and water from a contaminated stream. As a preliminary experiment, a number of bacilli isolated from water were tested in this way. All actively multiplied for ten or fifteen days after being sown. This multiplication was determined at stated intervals of one to five days, on gelatine plates. Among the pathogenic microorganisms, the anthrax bacilli multiplied, in some cases, to the fifteenth day after sowing. The bacilli of typhoid fever increased in number up to the third day, then diminished. Even when the contaminated water was greatly diluted with distilled water, there was a perceptible multiplication, or, at least, a preservation of the vitality of the bacilli for at least twenty days. In well water and drinking water from the river, the increase was not so marked, but the vitality was not destroyed after the twentieth day. In distilled water they were traceable after fifteen days. Cholera bacilli exhibited the peculiar property of quite disappearing during the first days, but multiplying later to a very marked degree. The authors explain this strange fact, by assuming preliminary adaptation of the bacilli to the medium in which they are placed, by which their multiplication is somewhat retarded. The enormous multiplication of typhoid and cholera bacilli in sterilized milk, points out the importance of keeping a strict supervision over this important article of food, and the absolute necessity of boiling all milk in times of epidemics.

Experiments designed to test the struggle for existence of pathogenic bacteria in unsterilized water, failed by reason of the rapid growth of the bacteria originally present. Immediately after sowing, the cholera bacilli were by far the most numerous, but, within a day, other bacteria multiplied so enormously as to crowd them out of sight or existence.

When first undertaking to analyze water by this method, it seemed to me that if the collected water were allowed to stand at a given temperature, and the maximum number of bacteria determined which the water was capable of sustaining, we might have an indicator of the relative quantity of organic matter present. This the authors have virtually done, only in a way which must be more accurate in some respects. If the water be sterilized by heat, and only one species of microörganisms sown, the conditions would be more uniform, since different bacteria would multiply with different rapidity. In such experiments the change in the water, effected by sterilization, must be taken into consideration.

From recent investigations, M. Bolton[1] determined in water the presence of certain bacteria, which multiply very rapidly for a number of days, and quite independently of the quality of the water used as a culture medium. The addition of nutrient substances, in quantities too small to be measured, was sufficient to cause active multiplication. They found nourishment enough in water repeatedly distilled. Pathogenic bacteria, added to water, regularly decreased in number, independently of the quality of the water. He therefore concludes that the number of bacteria in a given sample does not furnish any safe basis for determining the chemical constitution, the degree of pollution, or the infectiousness. A knowledge of the various species of bacteria is a safer guide than their number, in estimating the quality of water.

Such researches aid in giving bacterial enumeration its proper place. They indicate the method to be pursued: a careful study of the biological properties, and the possible pathogenic effect of each species. The relation of bacteria to the processes in the alimentary canal is still an unexplored field. May not some of the speciesdaily introduced into the digestive organs, in the drinking water, give rise, under certain conditions, to fermentations and decompositions leading to catarrhal and other morbid changes?

Lines of research might be multiplied, if space

[1] Loc. cit., p. 455, Die Vermehrung d. Bakt. im Wasser, von Dr. Wolffhügel u. Dr. Riedel.

[1] Zeitschrift für Hygiene, I. Bd., I. Heft., Deutsche med. Wochenschr., 1886, p. 506.

permitted. They are comparable to clinical observations at the bedside, the value of which increases with the quantity. Since work of this nature is more laborious than intricate, and requires but little apparatus, its prosecution in every biological laboratory is to be highly recommended.

A LARGE CALCULUS REMOVED FROM THE BOWELS BY INFLATION.

By THOMAS EVANS, M.D.,
of Plainfield, Ind.

On Friday, December 4, 1885, Mrs. J. was taken with a severe attack of diarrhœa; after a few hours it suddenly ceased. Then followed pain in the bowels and vomiting. This condition of things continuing until the next evening, her husband called on me for some morphine. No relief being obtained from the medicine, I was requested early Sunday morning to visit her. I found her in a very prostrate condition, having slept none at all for the last two nights; and the pains occurring every few minutes, with vomiting and great tenderness of the hypogastrium on pressure. To the right and surrounding the umbilicus could be felt a tumor the size of a child's head. No nourishment had been retained in the stomach for two days; the bowels were constipated. The pulse and temperature were scarcely up to the normal standard.

Mrs. J. possesses a vigorous constitution naturally, is short in stature, quite fleshy and corpulent, is now in her fifty-ninth year, and is the mother of thirteen children, eleven of whom are now living and healthy. My diagnosis of the case was colic, with symptoms of impaction of the bowels. All medicines, excepting two doses of calomel, were rejected by the stomach. The injections of warm water returned from the bowels without any fecal matter.

The symptoms becoming aggravated by noon on the fourth day, at 2 P.M. I inflated her bowels with air, which at first passed up only a short distance; and then passed out by the rectum. Continuing the operation for twenty minutes, it began to move higher up; and in half an hour, concluding she could not bear any more, it was discontinued. About two hours from this time an enema brought away a small amount of fecal matter.

Fears being expressed by the patient of a displaced womb, an examination revealed a slight displacement forward, which being rectified she expressed herself as much relieved. Having requested some nourishment, soup was taken and retained; and no more vomiting followed. Soon after a moving in the bowels was felt by the patient; and about 5 P.M., while over the bed-pan, something passed from the bowels, striking the bottom of the vessel with great force and with a loud report. This was immediately followed by a very copious discharge from the bowels, over which the patient had no control. Over a gallon of fecal matter was discharged, and the condition of the patient was immediately changed; all symptoms of pain and vomiting came to an end. On removing the evacuations from the vessel a large calculus was found, measuring two and a half inches in length and four and a half inches in circumference, and weighing seven hundred and twenty grains. It was evident that this calculus had been the cause of the impaction of the bowels; and that it had been dislodged by the inflation.

The calculus is covered with a coating of lime, has a smooth, shining appearance like polished marble, is grayish-white, covered with black, brown, and yellow spots. It has the appearance as if there might have been adhesions on its surface. It was sawn through its centre six weeks after its discharge, since which time it has hardened considerably and assumed a more polished appearance. Near the centre is a dark spot one-third of an inch in diameter, which was quite soft—of the consistence of beeswax. Surrounding this are dark and light rings, showing layers of cholesterin, which increase in hardness toward the periphery; and finally an external coating of lime, varying from two lines to half an inch at the small end. Its fractured surface glistens like resin, and the sawdust dissolves in sulphuric ether, giving a straw-colored solution.

How and when this stone made its way into the intestines are questions not easily determined. Did it pass by the ductus communis choledochus by dilatation, or through it or the walls of the gall-bladder by ulceration? Mrs. J. has been in poor health for seven or eight years. Seven years ago she suffered a great deal from pain in the right side. During the winter of 1880 she was laid up with a remitting fever of a mild type for seven weeks; followed by a protracted convalescence. There were marked icterus and pain in the right side near the umbilicus, requiring hypodermatic injections of morphine. These symptoms gradually gave way; but the pain in the side never left entirely. There was a tender spot to the right of the umbilicus, radiating across the lower part of the abdomen, increased by exercise or exertion; but more annoying in bed than at any other time; compelling her to lie on the right side and keeping her awake most of the night. Every winter she has had light attacks of just such sickness. One year ago she had quite a severe attack, brought on by overwork. The pain was of an aching, worrying character, as though a heavy weight were pressing on her; spreading out on the abdomen, passing around to the right kidney, up toward the liver, with a great amount of gas and sourness of the stomach, often vomiting a great amount of bile. Scarcely anything remained on the stomach for several weeks, except milk and lime water. After a tedious convalescence of three or four months, a discharge per vaginam of pus mixed with blood appeared, continuing seven or eight weeks. This occurred last summer. Since then she had been slightly improving; and up to the time of the impaction of the bowels considered herself gradually getting well. At the same time she was unable to lie or turn over with comfort on the left side in bed. There was that ever-present weight and aching on the right side of the abdomen, keeping her awake at night and preventing her exercising through the day. Her diet had to be very spare. Very little meat could be borne, and vegetables and farinaceous articles in very small quantities, or

vomiting would follow. The bowels were never constipated, but inclined to be too loose. There were never any severe attacks of pain, indicating the passage of gall-stones through the ductus choledochus. The patient thinks she never had a chill, but considerable inward fever, causing her to drink a good deal of water.

Since the discharge of the calculus she has kept herself quiet, mostly in bed for several weeks; and for some time was unable to turn over in bed without help, or to move about on account of the soreness of the right side. She has improved under the influence of rest and warm fomentations, so as to be up and about. She called on me recently and said she was able to visit her neighbors, had a good appetite, good digestion, and although there is still a little soreness in the right side she feels well, can turn over in bed, lie on either side, and thinks she will soon be as well as ever.

The most probable view of the origin and cause of this calculus is that it had been forming in the gall-bladder for several years, and that during the latter stages of its growth it pressed against the pyloric end of the stomach, causing the frequent vomitings of the patient for several years past, and preventing the passage of the bile into the intestines at times, producing the jaundiced condition of the eyes and skin. If a stone an inch and a half in diameter can pass so small a passage as the ductus choledochus, as some authors are inclined to believe, surely it would have given some unmistakable signs in the way of pain, there having been no such pain to warrant such an event. It surely could not have passed during the last sickness; for no pain appeared till after the diarrhœa had stopped suddenly, as if the presence of some foreign body was blocking up the passage. Not till then did the pain and vomiting commence. Large quantities of bile attended the vomiting, which would not have happened had the calculus been engaged in the ductus choledochus, for its smooth round surface would have prevented its passage. The most probable view is, that the calculus passed through the walls of the gall-bladder by ulceration into the duodenum; and was in some way the cause of the discharge of pus last summer. It then found its way into the ilium, where it lodged till the time of impaction and the accumulation of fecal matter behind it, which was dislodged by the inflation of the bowels.

At this time, nine months since the discharge of the calculus, Mrs. J. is enjoying good health.

PLAINFIELD, IND., September 16, 1886.

MEDICAL PROGRESS.

PRIMARY TUBERCULOSIS OF THE CONJUNCTIVA.—RHEIN describes four cases of primary conjunctival tuberculosis, in which he succeeded in demonstrating the presence of tubercle bacilli in the diseased tissue. He was also able to show the tubercular character of the disease by the introduction of excised portions of the conjunctiva into the anterior chamber of the eyes of a rabbit. Careful examination of the lungs, larynx, etc., in all the four cases showed that their condition was normal. Swollen glands were found, but their appearance was secondary to that of the conjunctival lesion. —*Centralbl. f. d. med. Wiss.*, August 21, 1886.

THE REMOVAL OF HEMORRHOIDS RENDERED PAINLESS BY THE INJECTION OF COCAINE.—DR. J. P. STALLARD, of Manchester, records in the *British Medical Journal* of September 25, 1886, the following interesting cases:

Case I.—A gentleman consulted me on June 12, 1886, for a painful swelling, saying he thought that his "seat had come down." On examination, I found a large venous pile, tense and shining, and tending to ulceration, the base of which sprang from just within the margin of the sphincter ani. With difficulty and pain, it was reduced; but, as it descended on the following day, it was decided that it would be best to tie it. The patient was a very sensitive man, and asked that chloroform might be given to him; but, thinking it was a suitable case, I decided to try the effects of cocaine. Five drops of a ten per cent. solution of hydrochlorate of cocaine were injected, by means of a hypodermatic syringe, into each side of the base of the hemorrhoid; and, after waiting five minutes, the tumor was seized with a vulsellum, transfixed with a double-threaded needle, and tied in the usual manner. A morphine suppository was placed in the rectum, and from the commencement of the operation up to complete recovery, a period of eight days, the patient did not experience the slightest pain.

Case II.—On June 17th, a young pregnant woman consulted me for a large venous pile, commencing to ulcerate, and occupying the position described in the preceding case. The same number of drops were injected, and the hemorrhoid was tied. She experienced no pain during the operation, which was attended by no evil consequences.

In both the above cases, no toxic effects were produced from the use of cocaine. The solution used in the second case had been kept for three months, and contained one grain of hydrochlorate of cocaine in a drachm.

Remarks.—By means of cocaine, operations for the relief of hemorrhoids can be rendered painless, but the effect of the drug soon passes off; and, to insure absolute freedom from pain, it is necessary to follow it up with morphine, administered in one of its many forms. By using cocaine as above described, the operation is rendered much easier, and can be accomplished by the surgeon single-handed, without the help of an assistant, who is indispensable when a general anæsthetic is employed.

OIL OF TURPENTINE IN SCROFULOUS OZÆNA.—MALACRIDA (*Centralbl. f. Chir.*, July 17, 1886) reports the case of a girl ten years old, who had ozæna of long standing, which had long been under treatment in vain. Taking a suggestion from the cure of old fistulous tracts with oil of turpentine, the author used this drug locally, and gave the patient a supporting diet. Cotton tampons moistened with a few drops of the oil were introduced into the nose. As they caused considerable irritation, those subsequently used were wrapped with dry cotton. A perfect cure took place in a week. Five other cases treated by the same method are mentioned, in none of which was the cure delayed longer than a month.

The Treatment of Chronic Abscesses by Injections of an Ethereal Solution of Iodoform.—Verchère (*Rev. de Chir.*, June, 1886) reports twenty-three cases which were treated in this manner, and gives the following directions in regard to the operation: The solutions of iodoform should be of varying strength, one of five per cent. being used for large abscesses, and one of ten per cent. for small ones, while small, superficial abscesses may be filled with a saturated solution. If the skin over the abscess is not affected, the needle of a hypodermatic syringe is introduced in an oblique direction, so as to form a valvular fold; the pus is then drawn off, and the iodoform solution is injected. If, however, the skin over the abscess is quite thin, the pus is removed with an aspirator, and the opening made by the needle is sealed with collodion, after which a hypodermatic-syringe needle is inserted into the abscess cavity, and the injection is made as before. The object of these manœuvres is to prevent the ether from escaping through the puncture, as it at once tends to do on becoming volatilized. As the solution volatilizes, the iodoform is deposited over the entire inner surface of the abscess, and is slowly absorbed—so slowly in fact that the danger of poisoning by the drug is said to be very slight. The phenomena observed after an injection are, briefly, as follows: Rapid and sometimes excessive swelling results from the volatilization of the ether, but this soon subsides. If the skin over the abscess is healthy, the abscess cavity will speedily be replaced by indurated tissue, without the occurrence of any external change. If the skin is already inflamed, it will separate in a few days in the form of a yellowish slough, after which healing will occur by granulation, the resulting cicatrix being slight. The advantages alleged for this method of treatment are the perfect safety of the operation, the rapidity of the cure, the fact that the patient is not confined to his bed during the treatment, and the non-recurrence of the abscess.

Discussion on Castration.—From the report of the meeting of the St. Louis Obstetrical and Gynecological Society, published in the *St. Louis Courier of Medicine* for September, 1886, the following excerpts are taken:

Dr. Gregory. A few weeks ago, during the session of the American Medical Association, a physician brought his wife to this city; she is his second wife, a handsome young woman, not more than thirty years of age. She has had epilepsy for some time past—several years, and she has had one child. She has some ovarian trouble. Her husband insisted upon a laparotomy as the only thing that would cure her. She had got the consent of her father and mother, and fully made up her mind to have the operation performed, and it was done. He was in my office on Monday, and told me that he was about to go home; that the operation had been performed, and his wife had had no paroxysms since. Evidently this is the popular feeling now. I wonder that this thing does not get into our asylums—into the ordinary insane asylums. I wonder that men are not treated in a similar way. I don't see, if mania, or mental conditions approximating mania, are cured in the female by this operation, why castration should not be resorted to to cure the same class of troubles in the male. I don't know whether men will be as ready to submit to operation as women, but I don't see why reasoning from analogy does not lead us to the same conclusions.

Dr. Boisliniere. In Central Asia, little girls are spayed a short while before the period of menstruation; and they are said to make very useful house servants, and it is surprising how little importance they attach to this operation. They do not seem to consider it a dangerous operation at all. The idea which Dr. Gregory has advanced is, I think, an original one, and there is probably a great deal in it, but I think it would be difficult to popularize the idea among men.

Dr. Papin. There is a diseased person called the "old maid." A woman menstruates about thirty years of her life. Her social position, her surroundings, warrant her in wishing that she may, as her companions do, settle in life—in other words, marry. For some cause or other she never marries. Responsibilities are thrown upon her shoulders that prevent it, or she is disappointed in a love affair, or other causes prevent her from marrying. Now she will continue to menstruate from month to month, and from year to year, until the continued and never-resting functions of these organs finally attack her nervous system, and she becomes irritable. She is, in other words, an old maid. She has become peevish, fault-finding, and annoying. Now I would like to know whether it would not be proper to perform this surgical operation upon these persons?

Hydronaphthol.—Dr. Justus Wolff asserts that E. Merck's statement that betanaphthol and hydronaphthol are identical, is a mistake, which may result in the most serious consequences if betanaphthol be used instead of hydronaphthol, "as the first one is a most dangerous and deadly poison, whilst the latter is an excellent, absolutely reliable, and harmless antiseptic." The poisonous character of betanaphthol has been established a long time ago by such authorities as Kaposi, Neisser, and Piffard, and lately by Max Schwarz, while Dr. G. R. Fowler, Dr. Lawrence Wolff, and many others have proved hydronaphthol to be non-poisonous and a most effective antiseptic. Hydronaphthol is distinguished from betanaphthol, not only by its physiological action, but also by distinct chemical reactions and by its chemical constitution, as it possesses certainly more hydrogen in the molecule than betanaphthol. Of the several distinguishing chemical reactions, the following may be given as an example: If from a diluted iron perchloride solution two drops are added to an alcoholic betanaphthol solution, it becomes of a bright green color, whilst the same proportion of an alcoholic hydronaphthol solution of the same strength becomes dark yellowish-brown by addition of the same proportion of iron perchloride solution. Other reactions are also different, and the melting-points obtained by most careful determinations are for hydronaphthol 117° C., and for betanaphthol 122° C. These and other facts satisfy the author that hydronaphthol is distinct from the poisonous compound which is known as betanaphthol, and that it is not alphanaphthol nor a mixture of the two last named, and does not contain any of either. —*Druggists' Circular*, September, 1886.

An Unrecorded Danger from Continued Large Doses of Iron.—The preparations which Dr. J. Strahan has found to cause symptoms of obstruction are as

follows, namely: Ringer's pill of 5 grains of dried sulphate of iron = 9 grains of ordinary sulphate; half drachm and whole drachm doses of tincture; mistura ferri composita, P. B.; made as strong as to contain 8 or 10 grains of sulphate of iron and carbonate of potash in each dose. Any of these, if given three times, or even twice, daily, for from one to two weeks, and if natural or artificial diarrhœa do not in the meantime wash out the quantities of insoluble sulphide, will cause severe colic and constipation, which morphine and turpentine stupes seem unable even to alleviate, and which, it seemed to him, would continue indefinitely, or till death, if not removed by a smart saline purge, or other means. He has seen twenty-four hours of rhythmic agonizing pain, very like labor, with nearly constant vomiting, no sleep or ease, after a grain of morphine by the mouth, the temperature rising to 101° Fahr., and great depression of all the powers of life, from a couple of weeks' course of Ringer's pill, which had done immense good to the system at large. This has not occurred once only, but dozens of times, so that he now expects it, and provides against it. As soon as ever a large dose of any saline—he prefers an ounce of sulphate of magnesia—has well acted, all symptoms rapidly disappear. At this time, and for twenty-four hours after, the stools seemed composed half of dirty water and half of black sand. He thinks this latter fact explains the pathology of the matter. In fact, it is a real obstruction—an acute one, too—by quantities of insoluble sulphide of iron. The quantity of this black sand, which comes away when severe constipation and colic have occurred, is surprising. It seems to be much more in quantity than the whole iron ingested, although the stools have been jet black all along, through excreting the sulphide. So, it seems to him, it must lodge somewhere; perhaps in the cæcum and appendix. Then when the iron begins to sicken the patient (gastric catarrh), the sulphide, he supposes, concretes by mucus, and forms an obstruction which brings matters to a crisis. The length of time that a patient can take large doses of iron, depends on the state of the bowels; if they be kept, or remain, slightly loose, he does not suffer at all; if he becomes constipated, the iron soon sickens, and the horrible pains begin; if he were to take a smart saline purge once a week, he believes he could go on indefinitely. The saline gives the quickest relief, because it produces such a vast exosmosis of water from the intestinal wall at all points, as to dissolve the mucus which binds the sand, and then washes it out. In extreme constipation, it dissolves fecal lumps in the same way, except when the masses are enormous. It is thus the best purgative where there is a stricture in the bowels, with dilatation above, as it melts the feces into a fluid, when they can run through the narrow part.

Another great advantage the salines have, is that they cause no pain, no griping. A teaspoonful of Epsom salts every two or three hours will put an end to many a case of fecal obstruction in old people, and that without pain, where croton oil, and drachm noses of jalap, have only given rise to unendurable pain and collapse. —*British Medical Journal*, September 18, 1886.

POTASSIUM IODIDE IN DIPHTHERIA.—STEPP maintains that iodine exerts a direct curative influence upon diphtheria, and that its continued exhibition under proper restrictions is entirely harmless. It is administered as iodide of potassium with, occasionally, the addition of the tincture of iodine. For the first three years of life a two to four per cent. solution is used; for later periods, four to ten per cent.; the dose recommended is one teaspoonful hourly. The author reports cases in which the method described has been employed with advantage.—*Centralbl. f. d. gesammte Therapie*, September, 1886.

NATURE OF COBRA VENOM.—In an article in *The Journal of Physiology* for September, 1886, DR. R. WOLFENDEN presents the following conclusions:

1. That its toxicity is not due to any bacillus, bacterium, or living organism.

2. It is not due to any alkaloid.

3. It is not due to any hypothetical "cobric acid."

4. It is wholly and solely due to the proteid constituents of the venom.

The proteid constituents are

1. Globulin, which is always present, and probably kills by interference with the respiratory mechanism (asphyxia), and without paralysis—causing local inflammation, but not of great intensity, compared with daboia.

2. An albumin resembling acid albumin, which is precipitated along with globulin by saturation, and which is in some degree dialyzable. This proteid probably acts on the respiratory apparatus chiefly, like globulin, but less intensely.

3. An albumin which is precipitated by Na_2SO_4 out of the magnesic filtrate, and which is serum albumin. This is also toxic, and produces a kind of ascending paralysis with fatal termination, by suppression of the respiratory function from probable paralysis of the muscles concerned in respiration.

4. Traces in some specimens of hemialbumose, and questionable traces of peptone. I regard these as accidental, and probably due to the length of time the poison has been kept.

ALIMENTATION BY THE VAGINA.—DR. J. N. LOVE (*Weekly Medical Review*, July 17, 1886) concludes an interesting paper upon alimentation by the following remarks on the vagina as a channel through which, in certain cases, an invalid may be fed:

1. In cases which demand artificial alimentation where the conditions will permit, the vagina may be utilized to supplement feeding by the rectum.

2. In some instances disease of the alimentary canal in its entirety precludes feeding by either the stomach or the rectum; in such cases the vagina may be utilized to practical advantage.

3. That whether the vagina or rectum be used for purposes, of feeding, the materials should be as thoroughly digested previous to using as possible; the milk albumen or beef fibre completely peptonized, and all the starchy matters changed into dextrose or glucose.

4. In many instances the vagina may be utilized for purposes of general medication and stimulation, and the stomach saved for the important one of feeding.

5. In many cases vaginal feeding, stimulation, and medication is beneficial; in many others it is a potent means for saving and prolonging life.

6. In both rectal and vaginal feeding the same gentle care is necessary, and one advantage possessed by the

latter over the former, is that the vagina is much the more tolerant of intrusion, and can be utilized for an almost unlimited time without revolting.

Hydrogen Dioxide in Diphtheria.—Hofmokl records the use of hydrogen dioxide in fifty cases of diphtheria, and holds that the drug is of value in this disease, though by no means a specific.

Three parts of pure glycerine are added to two hundred parts of the two per cent. aqueous solution of the dioxide, and the mixture is used both for inhalations with a steam atomizer and internally. In the latter case one teaspoonful is given at intervals of from one to two hours. Considerable salivation results from this treatment, and the membranes are expelled usually on the third or fourth day. Neither the reproduction of the exudate nor the downward extension of the membrane is prevented, but the general condition and appetite are notably improved.—*Centralbl. f. Chirurgie*, August 21, 1886.

The Salts of Copper in Scrofulosis.—Prof. Du Molin, of Gante, in the course of experiments upon the toxic action of the salts of copper on a dog which suffered from facial impetiginous eczema, noted its cure, in the course of six weeks, with the progressing doses of from one milligramme to one gramme a day. Through analogy he applied the same treatment to the eczema impetiginosa of children, obtaining success in twenty-five cases. Extending the use of the same medication to all other scrofulous manifestations, he met with equal success, except in cases of *keratitis*, which have not always responded to the treatment. Cupric intoxication may be avoided by the use of moderate and methodically increasing doses.—*Western Medical Reporter*, Aug. 1886.

Power of an Operator Over a Patient under the Influence of Nitrous Oxide.—Dr. W. C. Bunker, of Oregon, Ill., writes as follows to *Dental Cosmos* of October, 1886:

I have been using nitrous oxide gas in my practice for a number of years. For the first two or three years I had but indifferent success, especially when called upon to remove the wisdom-teeth or second molars. To insure the mouth being open, I used to employ a rubber gag, sometimes substituting for it a large cork with a string attached. In a majority of cases, when the gag was taken out, the jaws closed somewhat and remained rigid, no proper amount of force sufficing to open the mouth until the effect of the gas was nearly spent. I finally declined to administer gas for extracting teeth back of the first molars.

Requiring the extraction of a tooth from my own mouth, I went to a brother dentist and had the gas administered. While taking it, and while under its effects, I was perfectly conscious; heard every word said, but was powerless to move a muscle. I knew when the inhaler was removed and the forceps taken up and adjusted, but felt no pain. The tooth was broken off, and two more ineffectual efforts were made to extract it. Still there was no pain. At this instant I regained control of myself, retaining a knowledge of all that had transpired.

This experience impressed me with the conviction that if patients heard and understood, they could be made to obey. It had been a habit with me to test the condition of my patients during the inhalation of the gas by requesting them to raise the left arm. They usually responded, some continuing to raise and lower the arm until the effect of the gas passed off, seeming to be impressed with the idea that they must do so.

The next occasion I had to administer gas I made the usual examination of the mouth, and, after learning which teeth I was required to remove, I turned abruptly to the patient and said, "If, while you are under the influence of the gas, you hear me request you to open your mouth, do so. You can, if you understand now that it will be necessary." I said nothing about raising his arm, but just as I thought he had inhaled enough gas, I said, "Raise your left arm," and was surprised to see that, instead of doing so, he promptly opened his mouth wide. As his breathing indicated that he had enough gas, I dropped the inhaler and extracted the teeth. After he regained consciousness, I said, "Did you hear me ask you to raise your arm?" He said, "I heard you tell me something, and as you had charged me to open my mouth if asked, I thought that was what you wanted."

I have taken advantage of this experience ever since —some three years—and have yet to meet the first failure. After charging a patient to respond by opening the mouth when told, I proceed to administer the gas, and just before he passes under its influence I say, "Remember and open your mouth when I tell you to." Thus the last thing the patient thinks of is opening his mouth, and almost invariably it is the first thing he does. I have tried the command without previous instruction, and failed to obtain a response. I think this suggestion worthy of investigation by those who use gas.

Tolerance of Narceine by Infants.—Laborde, after considerable experience with the drug, reports that for use in many diseases of children it is far superor to the preparations of morphine. It induces sleep, and notably diminishes bronchial secretion. He has found its use very advantageous in whooping-cough, and in nocturnal coughs in general. As an analgesic, it has not the power of morphine. It is best administered in syrup or in suppositories.—*Journal de Médecine de Paris*, July 25, 1886.

Paralysis depending upon Idea.—Dr. C. W. Suckling writes as follows to the *Lancet* of September 18, 1886:

In the *Birmingham Medical Review* for June, 1885, I published an account of a boy who had suffered from paralysis of one leg for two years, and whom I was able to cure immediately after making the diagnosis of paralysis depending upon idea. Since then I have met with three other cases, two of which were men. In one case there was complete anæsthesia of the hand; in another, hemianalgesia with localized and severe headache. In the four cases I have now seen, an accident occasioning slight injury was the exciting cause in each. All four cases were rapidly cured. Dr. Russell Reynolds, I believe, first described paralysis depending upon imagination. There is no malingering in these cases, but the patients are firmly convinced that they are suffering from paralysis. If the confidence of the patient be gained, an immediate recovery follows when he is told that he will be well immediately, the idea

being got rid of. In making the diagnosis, it is important to bear in mind the two classes of people in whom functional nervous disorders are met with—the neurotic and the hysterical; the features of which have been so graphically described by Dr. Clifford Allbutt in the Gulstonian Lectures for 1884. It is the neurotic that is apt to be affected by these paralyses depending upon idea, and it is these cases that are instantly cured when the diagnosis is made. The hysterical patient is cured with difficulty, and frequently relapses; the neurotic does not relapse. The neurotic individual is vivacious, good-tempered, unselfish, intelligent, active, and industrious, anxious to be cured, and grateful for recovery. The hysterical individual is listless, apathetic, lazy, selfish, with characteristic expression, not usually anxious to get well or thankful for recovery. The following is the fourth of these cases of paralysis depending upon idea that I have met with during the last twelve months.

Sarah F., a widow, aged forty-six, was sent to the Queen's Hospital, to be admitted under my care, by Dr. Middleton, of Harborne, on the fifteenth of March last, and was discharged, well, on March 28th. She has led a very industrious life, having supported her five children by needlework since her husband's death ten years ago. On October 9, 1885, she tumbled downstairs, falling down twenty-one steps on to her back. She was much hurt and "dazed," and very much frightened, thinking every bone in her body was broken. She walked about after the accident for a day or two, but suffered from pains in the back, down the legs, and round the body: these pains were intermittent, very severe, and lasted altogether three weeks. Two days after the accident she took to her bed, and a day or two later found that she was paralyzed in both her legs, and had lost all feeling in them. Since the accident she had suffered from constant headache and backache. Upon examining her, I found that she had a little power over the legs, but very little. Slight ankle-clonus could be elicited on the left side. The plantar and abdominal reflexes were lost, but the knee-jerk was well marked. There was complete analgesia, and thermal anæsthesia in both legs up to the knees. She was unable to localize tactile sensations below the knees, the anæsthesia not being complete. When touched with a sharp-pointed instrument, she said she felt as if she were being pushed. Muscular sense was unaffected. There was superficial tenderness over the lower dorsal spines, but no pain on firm pressure, or on percussion, and no irregularity of the spine. The bladder and rectum were unaffected, and I was informed by Dr. Middleton that she never lost control over the bladder, nor had any sign of bedsore during her illness. There was no œdema of the legs, no alteration of temperature, and no change in the color or aspect of the skin or nails. In fact, there were absolutely no trophic changes whatever. The response of the muscles to faradization of their nerves was normal, but there was considerable electrical anæsthesia. In summing up the symptoms present, I, of course, observed their incongruity, if we supposed the case to be one of myelitis, or, in fact, as due to any organic lesion. If the anæsthesia were due to actual lesion of the gray matter, how could the bladder and rectum escape? How was it that there was no sign of bedsore, no œdema, or other trophic change, such as muscular wasting? I diagnosticated the case immediately as being purely functional, and, the woman being of the neurotic type, as paraplegia depending upon idea. I at once acted upon this diagnosis, and told the patient that I should give her the battery, which I said would at once remove the loss of sensation, and enable her to move her legs as well as she ever did. She was delighted to hear this, and, after a minute's faradization, sensation was completely restored, and she had full command over her legs. I then told her that on my next visit I should expect to see her walking about the ward, for I was sure that she would be able to do so. I instructed Mr. Whittendale, my house-physician, to see that she got up after I left, and to apply the faradic current whenever she displayed any hesitancy. On my next visit, two days later, I found her up, and able to walk and run about the ward perfectly well. She was quite delighted at her recovery, and had been most industrious with her needle since getting up. She expressed deep gratitude, and hoped to be able to repay our kindness. I may add that I saw my patient on the fourteenth of the present month (September), and she was remaining quite well.

How was the cure effected in this case? Undoubtedly, I think, it was by the mental state of faith or expectation, or both, on the patient's part. She fully believed what I told her, and thus I was able to remove the idea she had that she was paralyzed. The essential thing, then, in these cases, is to make a correct diagnosis, and then the patients can safely, and with success, be told that they will quickly recover. Now, had this been a hysterical woman, I should in all probability have failed to cure her, or, at any rate, the cure would have been more tedious. I recently had a woman under my care, suffering from locomotor ataxy with hysterical anæsthesia. For two years I did all I could to cure the anæsthesia, and failed; but, when she left the infirmary, she applied leeches to her legs, and returned with the anæsthesia gone. Isolation, so useful in hysterical cases, is not needed in these.

In the same ward with my case of ideal paralysis, there was a young woman suffering from hysterical neuralgia, and the contrast between the two patients was very marked. The hysterical woman was listless and apathetic, did not manifest any desire to be cured, and would scarcely allow that she was any better than when admitted. When told that she was well enough to go back to her duties as a teacher, she seemed disappointed, and said that she did not intend to begin work again for some months. The neurotic woman, on the contrary, wanted to leave the hospital immediately she could walk. The hysterical woman was observed to be always sitting opposite the neurotic woman, contemplating her with her hands idly folded in her lap, watching the other busily working.

Such cases as these illustrate the enormous influence of the mind over the body. It is with these cases that the so-called faith-healers work pretended miracles. What an opportunity for a faith-healer my case would have afforded! Just as the mind has an enormous influence in causing disorders of sensation, of motion, and also of the organic functions, so also its influence can be used as a practical remedy in disease. As Dr. Wilks has well observed, "the practice of medicine is not only one of physic, but of psychology also."

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THE REPORT OF THE AMERICAN CHOLERA COMMISSIONER.

DR. E. O. SHAKESPEARE, of this city, commissioned last year by the President to investigate cholera in Europe and India, whose return to America after a year's absence we mentioned in our last issue, is busily engaged in the preparation of his official report, which we understand will be placed before Congress by the President, and will be published by the Government as a volume of considerable size.

We learn that the investigations of Dr. Shakespeare, having comprised anatomical and bacteriological studies, as well as those relating directly to hygiene, climatology, etc., have led him to conclusions concerning the nature and spread of cholera, which, in the main, accord with those enunciated by the German and Belgian Cholera Commissions. Dr. Shakespeare regards the comma-bacillus of Koch as a diagnostic sign of the greatest practical value for the early recognition of the presence of true Asiatic cholera. Irrespective of what may prove to be the real etiological relations of this microörganism to cholera, he looks upon this discovery of the German Commission as of incalculable practical importance to health authorities, of both local and general governments, whose duty it is to guard the people from the destruction of life and trade which usually follows an invasion of this disease. As to the pathogenic properties of the comma-bacillus, Dr. Shakespeare has less positive opinions. While he thinks it probable that this microörganism may also be the active cause of cholera, he feels that the proof is not yet absolute and fully convincing.

It is, therefore, evident that the conclusions of the American Commissioner are in opposition to those published by the English Commission, and in conflict with the notions advanced recently by Mr. Cuningham, the late Surgeon-General and Sanitary Commissioner with the Government of India, in his book entitled *Cholera: What can the State do to Prevent It?* Indeed, we are informed that, even in India, not one physician in fifty shares the opinions published by the late Surgeon-General.

In this connection it may be mentioned that D. D. Cunningham, of Calcutta, the well-known Indian pathologist and microscopist, has, as the result of his latest laboratory work, fully accepted the claims of Koch concerning the diagnostic characteristics and value of the comma-bacillus. It will be remembreed that Dr. D. D. Cunningham was originally heartily in accord with Klein and Surgeon-General Cuningham in their contradictions of the conclusions of the German Commission.

Apropos of this important change of opinion, the rumor has reached us that the chief of the English Commission, Dr. Klein, has also found reason to modify greatly his views concerning the diagnostic value of the comma-bacillus of Koch.

INTESTINAL OCCLUSION BY GALL-STONES.

IT happens occasionally that a gall-stone of large size reaches the intestine, and, sticking fast in some part of its course, produces a fatal obstruction. The condition is not common and WISING, in the *Nordiskt Mediciniskt Archiv*, xvii. No. 16, has supplemented the report of a case by an analysis of all the recorded instances, fifty-one in number. Of these, thirty-eight ended fatally. In a majority of the cases the stone escaped through a perforation existing between the gall-bladder and duodenum; but in four, at least, it would appear that the calculus passed through the bile passages, as no abnormal communication existed. The situation of the occlusion is rarely in the duodenum, more commonly in the jejunum or ileum, particularly the lower portion of the latter.

The attack is not often preceded by biliary colic, but usually sets in suddenly with pain in abdomen, vomiting, and the other symptoms of acute obstruction. In only five of the cases was a tumor palpable, and it is not clear whether, in every instance, this was the gall-stone. The treatment is that of ileus from other causes. Laparotomy has been performed in four cases, all of which were fatal. Washing out the stomach, as suggested by Kussmaul, might be specially serviceable in this form of occlusion, particularly if the obstruction was high up in the intestine.

The case reported in this number of THE NEWS, by DR. EVANS, is in many respects remarkable.

The calculus was of unusual size—one of the largest on record. The onset of the attack of ileus and course of the symptoms presented nothing special, and gave no clew to the nature of the obstruction. The tumor in the umbilical region was, no doubt, formed by the coil of distended intestine. The treatment pursued was extremely rational and eminently successful. We know of an unrecorded instance in which the patient after presenting the symptoms of ileus for several days passed a gall-stone nearly two inches in length. In this case the propriety of laparotomy was discussed the evening before the discharge of the calculus.

Large solitary gall-stones are not very rare, and we should say that only a limited number of them give rise to any trouble. They may exist in a normal-looking gall-bladder, but they tend in time to produce an inflammation which terminates either in an adhesive cholecystitis with obliteration of the sac, or in ulceration into a contiguous viscus, usually the duodenum or colon. The size and distensibility of the bile-ducts varies in different persons, but it is difficult to conceive that a gall-stone capable of producing intestinal obstruction, could pass the cystic and common ducts. Von Schweppel places the limit of size at one centimetre in diameter, but it is well known that permanent obstruction of the duct may be produced by much smaller calculi, and, on the other hand, the cases of Berkeley Hill and Le Gros Clark, quoted by Wising, leave no room for doubt that sufficient dilatation of the bile passages may occur to permit of the exit of a stone too large to pass through the bowel without inducing symptoms of obstruction.

FRACTURE OF THE PATELLA AND MALGAIGNE'S HOOKS.

IN THE MEDICAL NEWS of March 27, 1886, we considered the claims of Lister's method of opening the knee-joint and suturing the fragments of the fractured patella, and expressed our opinion that the simple methods which have proved so efficient in the practice of most American surgeons are to be preferred. In doing this, we made a passing allusion to the use of Malgaigne's hooks, or to one of the ingenious modifications of them made by Levis and Morton.

In regard to these instruments there is still—as there always has been—a diversity of opinion. Some surgeons praise them highly, while others characterize them as diabolical. In making this statement, it is proper to remark that the former are usually those who have given the hooks a fair trial, and the latter those who have not used them much. To the number of the supporters of the method suggested by Malgaigne, is now to be added MR. FREDERICK TREVES, of London.

In a short paper in the *British Medical Journal* for July 24, 1886, Treves states that he has used Malgaigne's hooks in all the cases of fracture of the patella which he has treated in the London Hospital during the twelve months preceding his report. Unfortunately, he does not give the exact number of cases. The results, he says, have been most satisfactory, judging from what can be observed in so short a time. This method has not had any unpleasant features. There has been no pain worth mentioning, no inflammatory reaction, no suppuration around the punctures, and no trouble in the joint. He adopts certain precautions to prevent these conditions. He washes the part concerned with carbolic acid solution, punctures the skin at the proper points with a tenotome, the two upper punctures opening the joint and permitting the escape of any accumulated fluid, after which the hooks are applied—the lower ones first—connected, and screwed up. The hooks are kept immersed in carbolic acid solution before being used, and, when they are inserted, the punctures are covered with powdered iodoform. The disposition of the upper fragment to ride is combated by passing a tape over the upper hooks and under the knee. The screw of the instrument is kept clear of the powder, and well oiled.

Mr. Treves operates without an anæsthetic, but under the spray, and he places the limb on a straight posterior splint before inserting the hooks, and elevates it after the operation. He thinks it important to keep the knee exposed to the air after inserting the hooks. The reason he gives for this is, that he believes a wound of the lower limb which is covered with dressings and bedclothes, is kept in a vitiated atmosphere, to its detriment. We think his practice is commendable, although we are inclined to attribute the benefit of exposure to the air more to its cooling effect than to anything which the atmosphere may or may not contain. Cumbersome dressings are a very frequent cause of distress and damage to patients, and anything which will prevent their application may be welcomed as an improvement in the practice of surgery.

This contribution of Mr. Treves to the subject of the treatment of fractures of the patella is one of decided value, and should encourage surgeons to renewed employment of the hooks of Malgaigne, or of other appliances similar in principle.

MULTIPLICATION of ideas is a good thing. With every year a taste for reading spreads among the people. Every class is provided for; no mind so immature, no child so young, but is offered its special aliment. Reading is made handy: the daily paper is presented to us in the street car; ten cents' worth of romance confronts us at every railway station. Consequently there arises among men and

women the habit of reading while in motion, which is most injurious; among children the habit of using their eyes by artificial light, after the lessons, which themselves should not be permitted at night, are got through with; consequently there is an ever-augmenting army of adults and toddlers wearing the livery of over-civilization, spectacles. As if with deliberate intent to aggravate this calamity, there is, moreover, an increasing disposition to use fine type. A large proportion of the cheap railway literature comes in characters which a paternal censorship would never allow to go into print. And worse than all, the children are brought up on it; some of the best and most widely read juvenile papers of the day are in such type as no mother should allow to enter her home. But, before parents can be expected to see this danger, the family physician must warn them.

The evil to which we have referred is not only a result of the use of fine type, but may be caused by the employment of type of improper shape, or by insufficient spacing between words and lines. Motives of economy induce the publishers of the cheaper forms of literature to reduce to the minimum the amount of unutilized space on the page—a result usually attained by the use of long and narrow type and the reduction in spaces just indicated.

The difference in legibility in two fonts of type of the same height but of different widths is surprising, and is always in favor of the broader letter. One may readily convince himself of this fact by holding a page of ordinary printed matter at the utmost limit of legibility. If now the page be rotated through an angle of forty-five degrees on its vertical axis it will be found that, from the resultant narrowing of the letters, the page becomes entirely illegible. If, on the other hand, it be rotated to the same extent on its horizontal axis, the legibility of the text will be found to be but slightly, if at all, impaired.

The reader interested in hygienic typography may be referred to the admirable essay by Javal in the 27th volume of the *Revue Scientifique*.

The question of a proper street-paving means more, involves more, and is of more importance than is here at least generally thought. It is not merely the comfort of those who drive in carriages, whether for pleasure or on duty, that is concerned. There are questions of scarcely-to-be-calculated savings of time, money, and strength, of the general cleanliness, and, therefore, of the general health, to be considered. How great a factor in the breeding, and then in the carrying, of disease-germs, and of a thousand dangerous fungi, the accumulated decaying dust and filth of our streets may be, we do not accurately know. The hopeless impossibility of cleaning with thoroughness hundreds of miles of streets paved as barbarously as ours are grows daily more evident.

As a matter of economy to horse owners, a class into which of necessity many physicians enter, a better pavement than either "Belgian blocks" or asphalt—we do not speak of the "cobble" relics of the stone age which disgrace us—is greatly to be desired. Asphalt fulfils many of the requirements, but, unless diligently swept and tended, and gravelled daily, as is done in London, it becomes a most dangerous horse-trap in wet weather. An improved pavement has been tried recently in Wheeling and other cities, and experiments are now being made with it in Chicago and Cleveland. It is composed of wedge-shaped fire-bricks set in an arch on a foundation of sand and gravel, with a top coating of pitch and sand, and its cost is, including material, but eighty-three cents per square yard. This pavement is claimed to be firm, clean, and smooth; to be water-tight; to have great power to resist pressure, owing to the combination of arch and wedge in laying; and to afford an unequalled foothold for horses in all weathers, and on all grades. In addition to all these advantages, it is noiseless, durable, and cheap.

Here, if all that is said be true, is something looking like the ideal street roadway. The experiment on some of our smaller streets might easily be tried, and perhaps some day, if we are not too supine to desire better than the bad we now have, our reproach may be removed. At present, Philadelphia, unlike a warmer place, is not even paved with good intentions.

We referred some time ago to the very favorable reports by Huchard on the prolonged use of iodide of sodium in angina pectoris. In the *Revue de Médecine*, of August 10, 1886, Laschkevitch records four cases in which excellent results followed the administration of cocaine in doses of one-half to one-third of a grain, three times a day. The attacks appear to have been relieved very quickly, though scarcely with the rapidity which characterizes the action of amyl nitrite. A combination of these remedies might prove more serviceable than either of them alone.

SOCIETY PROCEEDINGS.

THE AMERICAN GYNECOLOGICAL SOCIETY.

Eleventh Annual Meeting, held in the Hall of the Johns Hopkins University, Baltimore, Md., September 21, 22, and 23, 1886.

(Concluded from page 390.)

THURSDAY, SEPTEMBER 23D.—THIRD DAY.

MORNING SESSION.

Dr. W. H. Baker, of Boston, read a paper on

ELECTROLYSIS IN GYNECOLOGICAL SURGERY.

The speaker referred more particularly to the use of electrolysis in cases of fibroid tumor. He laid down the

following rules for the performance of the operation: It should not be employed within a week before or after menstruation. An anæsthetic should be administered. It is better to use electrolytic needles for both the positive and negative poles. The operator should be absolutely sure of the cleanliness of his needles. The needle should be deeply buried in the tumor, in order that the current shall be insulated from the parts outside of the growth. The insertion of the needle should be made at the most prominent part of the growth, whether in the vagina or in the abdominal wall. The needles should not be too nearly approximated. If both needles are properly placed, the position of the poles makes no difference; the circuit being completed, the number of cells should be gradually increased from four to twenty or thirty (a more exact means of determining the strength of the current would be the galvanometer, but this had not given him accurate results); the length of time during which the application is continued should be from ten to twenty minutes, and should be determined by the character of the pulse. When the pulse becomes slower and weaker than normal, the number of cells should be diminished or the current discontinued. The current should be diminished gradually, and the wires should be disconnected at the battery before the needles are removed. The application should not be made at the surgeon's office. After the application the patient is to be put to bed, where she is to remain for one week. With such precautions, the speaker had never seen shock after the operation. A single treatment is often all that is necessary. He had never found it necessary to make more than three applications, and the latter number in only one case. There should be an interval of at least from one to three months between each application.

The use of electrolysis is also of service in the treatment of inflammatory effusions. The following case was related. Mrs. X., aged twenty-eight, married, the mother of one child three years old. The present trouble had existed since the birth of the child. Diagnosis of chronic perimetritis was made. The effusion was most marked on the left side behind the uterus. For six weeks ordinary treatment was given without much benefit. For the next two months the treatment consisted of hot water injections, applications of iodine, and the use of the galvanic current, with the positive pole in the posterior cul-de-sac and the negative pole over the epigastrium, using as many cells as possible. This was used every other day. This caused a decrease of the sensitiveness, but did not diminish the size of the effusion. At the end of this time, the positive electrolytic needle was inserted into the mass, and the negative sponge was pressed above the pubes. A current from eighteen cells was applied for ten minutes. At the end of a month scarcely a trace of the effusion could be felt. Before resorting to electrolytic puncture, the application of the current as first employed in this case, should be tried, as it does not require an anæsthetic and avoids the slight risk which accompanies even small wounds.

The author presented the following conclusions:

1. Electrolysis is a useful agent in the treatment of certain cases of fibroid tumors of the uterine walls and of chronic circumscribed periuterine effusion.

2. When applied to fibroid tumors of the uterus, electropuncture is a most reasonable and efficient method.

3. In the treatment of fibroid tumors by this agency, it is unnecessary to apply it often.

4. Cases of perimetric effusion to be treated by this method, should be selected with care in reference to the absence of all acute symptoms.

DR. JAMES R. CHADWICK, of Boston, had tried electrolysis in one case of fibroid tumor, introducing the needle through the abdominal wall. This caused a smart attack of peritonitis. During the following year, there was no decrease in the size of the tumor. A few weeks later he was called in consultation to see a case which had an enormous pelvic abscess as the result of electrolysis. This deterred him from continuing the treatment further.

DR. GEORGE J. ENGLEMANN, of St. Louis, said that by puncturing through the vagina, and, if possible, through the tissue of the uterus, we avoid the dangers of inflammation which accompany abdominal puncture. The same results can be accomplished without anæsthesia, and with less danger, by introducing one electrode in the diseased tissue and concentrating the total effect upon that electrode, by using a large electrode in connection with the other pole.

DR. JAMES B. HUNTER, of New York, remarked that his experience with this method of treatment had been limited, but he could not say that he had seen one case of fibroid tumor permanently relieved by electrolysis. In one case in which it was freely used by Dr. Freeman and himself, he had subsequently operated and removed the tumor by hysterectomy, the patient making a good recovery. He could find no evidence of the effect of the current on the tissue of the fibroid.

DR. MATTHEW D. MANN, of Buffalo, had employed this agent in one case, plunging one needle into the tumor from behind through Douglas's cul-de-sac, with a sponge electrode over the tumor on the outside. The current was kept up fifteen minutes. Six applications were employed. The size of the tumor was much diminished, and the tenderness and pain were lessened. The patient is now able to attend to her duties.

DR. JAMES B. HUNTER, of New York, then made some remarks on

PERSISTENT PAIN AFTER ABDOMINAL SECTION.

Abdominal section is, as a rule, performed for pain, and if this still persists, one of the objects of the operation has not been accomplished. Pain before operation may be due to various causes. It may be located in the ovaries, when it will be increased by menstruation. Disease of the tubes is a cause of pain in a large number of cases. The pain of peritonitis is of great importance. Acute peritonitis may be limited to the region of the ovaries and tubes, and the pain caused by it may be periodical in character. The presence of adhesions interfering with the mobility of the intestines and other organs, is a frequent cause of pain. A severe form of pain may also be caused by displacements of the uterus.

Abdominal section is performed for the relief of pain, and the organ at fault is successfully removed, and the patient recovers, but the pain continues. If there is no marked relief at the expiration of twelve or eighteen months, if the patient has been favorably situated, the

operation may be pronounced a failure so far as the patient is concerned. Such pain may be due to former peritonitis, to peritonitis following the operation, or to some defect in the abdominal wall.

Many of the cases which have been cured of diseases endangering life still suffer pain. Peritonitis following the operation is a cause of pain in a certain number of instances. A slight amount of peritonitis often occurs after abdominal section, and it may leave some slight adhesions interfering with the mobility of the viscera. Inflammation in the region of the stump often causes its attachment to the abdominal wall, and thus causes pain. Sometimes the uterus is fixed by inflammation, and the distention of the bladder causes pain. Adhesions of the intestine may also cause pain. Pain may result from defective union of the abdominal incision allowing a ventral hernia. Pain in the cicatrix may occur, as in other situations.

In the way of prophylaxis, the utmost precaution should be taken to prevent the development of peritonitis: especial care should be taken to do no violence to the intestines; antiseptic precautions should be adopted; the stump should be tied with aseptic silk. The early and judicious use of drainage and irrigation will go far toward preventing inflammation. The cold coil with antipyrin should be resorted to, if there are any indications of peritonitis.

In the treatment of the pain, blisters, vaginal injections, and the use of iodine may be resorted to. The internal use of opium is usually demanded. Such treatment can, however, scarcely be expected to cure the pain. Rest in the horizontal position is perhaps better than any medicine. If all palliative measures have been tried, and at the end of twelve or eighteen months there is no improvement, a second operation may be warranted. The dangers of operative procedure, and the uncertainty of the operation causing any improvement, must be stated to the patient. If the patient prefers the operation, an exploratory incision should be made. In one case the speaker had found a loop of intestine attached to the uterus, which he loosened with a good result. In another case considerable relief was afforded. As a rule, however, it is not possible to separate adhesions, and if separated they are prone to unite, and fresh peritonitis is apt to follow. Often the exploratory incision is all that can be made.

Conclusions:

1. All cases of abdominal section done for the relief of pain should be carefully followed up for at least two years, and not counted as cured simply because the operation has not been fatal.

2. Peritonitis following operation is to be dreaded as much for its remote consequences as for its immediate danger.

3. Extreme caution is demanded when the operation is undertaken where there exist the physical signs of chronic peritonitis.

4. Secondary operations, as a rule, are of no value, although occasionally they may afford relief.

5. Where the operation is done for the relief of pain, a guarded prognosis should be given. There are certain chances that a perfect cure will not result even if the operation itself is entirely successful.

DR. A. J. C. SKEENE, of Brooklyn, said that among the causes of pain after laparotomy, he would place the ligature. In tying the pedicle after removal of the ovaries, some traction must be made upon the broad ligament and the nerves must be drawn upon. That form of pain may disappear. Another cause of pain is the application of the ligature just tight enough to arrest hemorrhage without destroying the nerves. He thought that we have more pain after the use of the ligature than after the use of the cautery clamp. The cautery as a means of treating the pedicle has never been thoroughly tried in this country.

In regard to what constitutes success after abdominal section, he stated that many of the cases which he had reported as failures have subsequently turned out to be most successful.

DR. R. STANSBURY SUTTON remarked that Dr. Hunter had, in his paper, alluded to a case on which he operated two and a half years previously. In this case the ovary was surrounded by a coil of intestine which had endergone fatty degeneration to such an extent that its own weight was sufficient to cause it to break. He, Dr. Sutton, removed the ovary with the diseased bowel and brought the edges of the intestine together. The woman recovered, but she was not cured of her pain. It is not often that we have the opportunity during life to determine the results of a resection of the intestine. He asked Dr. Hunter to state what he had found.

DR. W. GIL WYLIE, of New York, objected that the author appeared to have completely ignored the general condition of the patient. What will cause pain in one person will not in another. With reference to peritonitis, he regarded it as a condition behind which there is some disease. In chronic peritonitis there is often some cause which keeps renewing the inflammation. In many of the cases that suffer after operation, the pain is due to imperfect operation. Sometimes a small portion of diseased tissue is left. He had taken the precaution to destroy the diseased tissue that may be left beyond the ligature, either by carbolic acid or preferably by Paquelin's cautery. This has lessened the mild attacks of peritonitis. Sometimes the inflammation is centred around the ligature, leading to abscess and the formation of a sinus. In some of these cases the trouble can be cured by dilating the sinus and fishing out the ligature. In many cases the peritonitis is due to the bursting of a small cyst. He had intentionally burst these cysts on the table, put the patient to bed, and watched the case.

Again, in cases where there is chronic inflammation of the lining membrane of the uterus this is not always cured by removal of the tubes and ovaries. This may cause pain not only in the uterus, but reflexly in other parts of the body. These pains can often be cured by dilating the uterus and applying carbolic acid.

DR. ROBERT BATTEY, of Georgia, stated that he experienced the difficulties alluded to by Dr. Hunter. All are familiar with the neurotic woman. As a result of a carious tooth, an intense neuralgia may be set up which may continue for years, and not be relieved by the removal of the diseased tooth. This is probably due to an alteration in the nerve tissue itself. He had carefully considered the explanation that these pains persisting after abdominal section were due to inflammation and adhesions, but he had wholly failed to find a satisfactory explanation in this quarter. The neurotic cases which have given him the most trouble have been

almost uniformly those where he was unable to find any such deposit in the pelvis.

The speaker had said that at the end of twelve or eighteen months we should give up these cases as failures. He would qualify that statement by more than doubling the limit. Some of the cases which were most unsatisfactory at the end of a year, had achieved the most gratifying cure by the lapse of time.

Among the causes which produce this neurotic condition, he inclined to rank, in the first place, an acquired neurotic habit from long suffering. In looking for causes, he had been much struck by one point—that alluded to by Dr. Skene—that is, the use of the ligature, and especially a rather loosely tied ligature. Dr. Skene suggests the use of the cautery and clamp. The speaker formerly used a method which has not been alluded to, and that was the separation of the ovary from its attachment by the écraseur. In these cases he did not have any troublesome neuroses, and there was no hemorrhage. He had been seriously considering a return to this method of treatment.

With regard to treatment by a second opening of the abdomen, he called attention to the fact that by a simple opening of the abdomen, for purely diagnostic purposes, unaccompanied by any great disturbance of the parts, the condition of the patient is often greatly improved, especially as regards pain. In a case of gonorrhœal inflammation, he opened the abdomen after the failure of all other methods of treatment. Finding everything glued down by adhesions, he abstained carefully from all manipulation after satisfying himself of the entire impracticability of any operation. The patient, without any deception on his part, gained the impression that the ovaries and tubes had been removed. She has now been under observation two months, and the relief has continued. Before the operation, she used full doses of morphia, but since then she has used no anodyne whatever. She has not menstruated since the operation.

He thought that, after removal of the ovaries and tubes, the uterine trouble will get well, but the cure may be hastened by applications to the interior of the uterus of a solution of iodine in carbolic acid.

DR. H. P. C. WILSON, of Baltimore, was satisfied that while cases do occur where the pain after laparotomy continues as a result of local adhesions, yet the majority of cases belong to the class in which the condition is due more to the neurotic element than to the operation. Most of these are long-standing cases where the mental condition has become so morbid that the patient is almost insane on the subject of her ovaries and tubes. Even if these organs are removed, the neurotic condition may remain for a long time. Where the woman has to work, and has not time to think of herself, these pains more rapidly disappear than where she is pampered with every luxury. Nothing is so good for the relief of these pains than exercise by walking. There is one remedy of which he uses more than any other drug in the materia medica: that is assafœtida. He never orders less than sixty pills. This tends to keep the mind occupied, and these conditions are more mental than physical.

DR. MATTHEW D. MANN, of Buffalo, supposed that Dr. Skene, in speaking of the ligature, referred to silk. He did not see that the objection would hold against catgut. Dr. Mann had used this in a number of cases and had no trouble with it. As regards the time after operation at which recovery may occur, he had seen it take place long afterward.

DR. HUNTER, in reply to Dr. Sutton, said that the patient was suffering much pain, which was increased on defecation. On opening the abdomen a little to the right of the original incision, he found the attached portion of the gut. A white oblique line showed where the two portions of the gut had united, and this was fastened to the abdominal wall. It showed a very satisfactory result. The condition was neither improved nor made worse by the operation. The neurotic condition has been referred to, but he considered this secondary. As regards chronic metritis, he agrees with Dr. Battey that usually after removal of the ovaries nothing more is required. He was willing to admit that his limit was too short and should be extended to two or three years. It is not well to expect any improvement after removal of the ovaries and tubes for at least twelve months. As long a time as this is required by the system to become accustomed to the changed condition.

DR. JAMES R. CHADWICK, of Boston, then read a paper on

THE BLUE DISCOLORATION OF THE VAGINAL ENTRANCE AS A DIAGNOSTIC SIGN OF PREGNANCY.

He had made it a point in all cases of early pregnancy to make a note of how much discoloration he could detect. He had tables of four hundred and forty cases examined. He had divided the discolorations into four groups, 1st, *doubtful*, where it was so faint that he could not be certain of its presence; 2d, *suggestive*, where it was more marked; 3d, *characteristic*, where the discoloration, though faint, is confined to the anterior wall of the vagina and more particularly to the urethra, just below the meatus and on either side of the meatus. In every instance, with one exception, where this was present, the woman was pregnant; and 4th, *marked*, where the congestion has become deep and exhibits the appearance constantly seen during pregnancy. He did not claim that the characteristic discoloration is seen in every case, but if carefully looked for, it would be found quite pronounced in the majority of cases. The color varies from a violet to dusky, or almost black. He claimed that this sign was of especial value in cases of retroversion, where the size of the uterus could not be determined, and in extrauterine pregnancy. He had obtained much assistance from it in a few cases of pregnancy accompanied by fibroid tumors, and also where there was a large accumulation of abdominal fat This sign is of decided value in the early months of pregnancy, but its absence should not be accepted as a positive proof against pregnancy, Cases were cited in which the discoloration had been observed in the seventh or eighth week of pregnancy.

DR. H. P. C. WILSON considered this one of the most valuable means of diagnosticating pregnancy in the early stages. It is invaluable in cases where women wish to deceive you.

DR. A. J. C. SKENE regarded this as a most reliable sign in the early months of pregnancy. He believed it to be an illustration of the physiological hyperæmia of the formative stage of development.

DR. JOSEPH TABOR JOHNSTON, of Washington, stated that some years ago he had referred to this point, and

the discussion which followed seemed to indicate that the discoloration was a congestion produced by interference with the return of the venous circulation by the pressure of the enlarged uterus. It was held that the same discoloration could be produced by any other tumor which would have the same effect as the pregnant uterus.

DR. WILLIAM H. PARISH, of Philadelphia, remarked that in regard to the continuance of the discoloration after labor, he had noted that in primipara where involution of the vagina takes place completely, the discoloration disappears with corresponding rapidity. Where there is subinvolution, the blueness may continue for a longer time. In multiparous women, where the blueness was marked, he had associated it with a condition of subinvolution of the vagina.

DR. CHADWICK, in closing the discussion, said that he had failed to note any persistence in the discoloration described. The general discoloration may persist, but the characteristic blueness will be found to disappear. He had looked for this sign in forty or fifty cases of fibroid tumor and had not found it in a single instance.

AFTERNOON SESSION.

DR. R. STANSBURY SUTTON exhibited the specimens from three cases of

SUPRAVAGINAL HYSTERECTOMY

and made some general remarks on the operation.

DR. W. GIL WYLIE thought that, in the large number of cases, all that is necessary can be done by the vagina. In many cases of fibroid tumor, however, where hysterectomy has been performed for hemorrhage, curetting the cavity of the uterus would probably have obviated the necessity for the operation. Fibroid tumors cause hemorrhage by enlarging the uterine cavity. Where there is hemorrhage, there is nearly always granulation. With the curette, not only may the hemorrhage be brought to a normal standard, but he had seen the tumor diminish in size. It had appeared to him that fibroid tumors have a period of development and a period of decay. After a fibroid tumor has continued five or eight years, its vitality is lessened and it may diminish in size. This is not the case in all instances, and we meet with cases in which, if hysterectomy is not performed, the patient will die as the result of the hemorrhage.

DR. REAMY, of Cincinnati, thought that if Dr. Wylie uses the curette in cases of fibroid tumor, he must, notwithstanding the adoption of all antiseptic precautions, have a certain number of cases of septicæmia. Curetting is much more likely to be followed by septicæmia when there is a fibroid tumor of the uterus than when the operation is done for ordinary fungous granulations. He believed that curetting under such circumstances would be almost as dangerous as the removal of the tumor.

DR. WYLIE, in reply, said that, so far as his experience went, he had had no trouble whatever. He invariably uses antiseptics before the operation and douches out the cavity afterward. He had never had septic poisoning in any case of curetting, and would not hesitate to use the instrument in any case of fibroid tumor with hemorrhage. He employed the bichloride solution, one to two thousand, in the vagina and one to five thousand in the uterus.

DR. WILSON said that where we have excessive hemorrhage from a fibroid tumor, he believed that there is no remedy so efficient as the curette. He had never seen any evil results from its use.

DR. REEVE asked whether any of the members had any experience with incision of the cervix in the treatment of fibroid tumors. This was highly recommended some years ago.

DR. SUTTON stated that he had tried division of the cervix and had stopped the hemorrhage, and had seen rapid fatty degeneration of the tumor occur in one case. He had tried curetting, the injection of iodine, and many other plans of treatment, and had obtained good results by all.

DR. WILLIAM H. PARISH, of Philadelphia, then read a paper on

THE HIGH MORTALITY OF THE RECENT CÆSAREAN OPERATIONS IN THE UNITED STATES, WITH THE REPORT OF A CASE.

S. M., married, was admitted to the Philadelphia Hospital, while in labor, September 20, 1885. She was the mother of two children, the last of which was born twelve years previously. Labor had begun on September 18th, the membranes soon rupturing. She was seen by two physicians, who had her sent to the hospital. The cord had prolapsed and the pulsations had ceased before she was sent to the hospital. On admission, she was found much exhausted, with the cord protruding from the vagina. The resident physician not recognizing the gravity of the case, Dr. Parish was not summoned until some hours after her admission. At this time the uterus was in a state of tonic spasm. The patient was etherized. The vaginal examination revealed merely a rigid condition of the cervix. The pelvic canal was roomy. The hand was introduced into the vagina and two fingers into the uterus. This examination showed two hard intramural fibroid tumors about the internal os. The author concluded that Cæsarean section should be performed without delay, and three of his colleagues were sent for in consultation. They all agreed that attempts at enucleation should not be made, but they did not agree as to the necessity of Cæsarean section. They were in favor of craniotomy. The skull was perforated, but it was found impossible to grasp and crush the head. Various instruments were tried without avail. The necessity for Cæsarean section was then conceded by all. The uterus had been emptied of its waters for at least forty hours. The vagina and lower part of the uterus were washed out with a solution of corrosive sublimate. The abdomen was opened and the section of the uterus made. The cervix was closed by tying around it a rubber drainage tube. At once a very offensive gas escaped. A large child was removed. The placenta was not in the line of the incision. Antiseptic precautions were employed during the operation. Deep and superficial sutures were introduced into the uterus, and the abdominal incision closed. A hypodermatic injection of ergotin was at once administered. After the operation the tube around the neck was removed. The patient died twelve hours later from exhaustion and rapidly developing septicæmia. At the autopsy the lips of the uterine incision were found in contact. Three dense intramural fibroid tumors were found.

Dr. Parish then referred to the great mortality of this operation in the United States, and presented the statistics of Dr. Robert P. Harris, of Philadelphia, of which the following is a synopsis:

Cæsarean operations in the United States .	144
Women saved, 37.5 per cent.	54
Children living when delivered . .	64

First fifty operations, saved, 54 per cent.
Second fifty operations, saved, 24 per cent.

Operations performed in good season when the condition of the woman was favorable have in this country saved seventy-five per cent. of the women, and eighty per cent. of the children.

Cæsarean section has been performed in thirteen cases where the obstruction was due to fibroid tumors, and of this number four recovered and five children were living. The time in labor in the saved cases was nine and one-half hours, fourteen hours, three days, and four days.

The following rules were then given for the performance of the operation:

1. Carefully determine the degree of obstruction and operate early in labor, as soon as the os is sufficiently dilated to permit drainage and before the rupture of the membranes. 2. Operate with full antiseptic precautions. The spray over the abdomen is unnecessary. 3. Control hemorrhage by compression of the cervix, either with a rubber tube or manually, preferably by the latter means. 4. Introduce numerous deep and superficial sutures so as to approximate accurately the muscular walls of the uterus, but do not carry the sutures into the endometrium. Removal of a section of the muscular wall is unnecessary. 5. Protect the peritoneum from the discharges, and if it becomes soiled it should be carefully cleansed. 6. Ergotin should be administered at the beginning of the operation.

DR. REAMY stated that in three thousand cases of labor he had never made a Cæsarean section nor any of its modifications. It is only now that the people are coming to recognize that craniotomy is not to be performed in any but the rarest instances, and that the sacrifice of life is unjustifiable. The explanation of the better results in other countries is not so much in the skill of the operators as in the condition of the cases when operated upon.

DR. PARISH agreed with Dr. Reamy, that craniotomy should be an operation of exceeding rarity. The people are not yet ready in this country to accept Cæsarean section, but one of the great troubles is with the general medical profession, who regard this as an operation almost necessarily fatal.

Adjourned.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, September 24, 1886.

FIRST VICE-PRESIDENT, DR. J. C. CAMERON, IN THE CHAIR.

OVARIAN TUMOR.

DR. TRENHOLME exhibited a large ovarian tumor, weighing some sixty pounds, which he had removed from a patient a few weeks ago. The woman was aged fifty years, and had suffered for years from this tumor, which had been frequently tapped. Extensive adhesions to the parietes, intestines, stomach, and liver were met with, and separated with great difficulty; the patient recovered well from the operation, but died of exhaustion on the eighth day. Dr. Trenholme remarked that the extensive adhesions found in this case were due to the frequent tappings, a practice which he deprecated. He had, during the past three months, performed ovariotomy four times, with three recoveries.

CASE OF SCURVY.

DR. R. L. MACDONNELL related the clinical history of a case of scurvy which had ended fatally by cerebral hemorrhage. The patient, a young farm laborer from the eastern townships, had for the last year lived on a diet composed exclusively of bread and butter, tea, milk, sugar, with no other vegetable than potatoes, and no meat whatever. Three months ago his health began to break down; he suffered from weakness, drowsiness, and indisposition to work, bleeding gums, and epistaxis, while the body became covered with bruise-like patches of discoloration, which appeared first upon the legs and then spread over the body. There had been rapid loss of weight. The main symptoms on admission were the presence over the body generally of small purplish patches of a petechial kind, sponginess, ulceration, and recession of the gums, and great debility. After four days' residence in the Montreal General Hospital, severe headache and vomiting set in, the patient became very feeble, semi-conscious, and died.

DR. R. J. B. HOWARD, who had made the autopsy, exhibited the brain, lungs, and heart. A large hemorrhage had taken place into the right cerebral hemisphere under the lateral ventricle, forming a cavity with ragged walls, which occupied the whole of the right temporo-sphenoidal lobe, and extended forward into the frontal and backward into the occipital lobe, converting the lower part of the right hemisphere into a mere shell. The surface of the heart was covered with extensive subpericardial hemorrhages, and in both lungs there were many hemorrhagic infarcts, but no subpleural effusions.

ANEURISM OF THE THORACIC AORTA.

DR. KENNEDY related a case of death from aneurism in which he had a day or two ago performed a post-mortem. The patient, a man aged forty-one, for the last three years had suffered intensely from neuralgia of the lower left intercostal, and had consulted many physicians without obtaining relief. He died suddenly while sitting in a chair. The most-mortem revealed the cause of death to be the bursting of a large aneurism of the thoracic aorta in the left pleural cavity. The ribs and left sides of the vertebral column were much eroded. Dr. Kennedy remarked that it was strange that the cause of the neuralgia had never been recognized during life. There was also found a large aneurism of the abdominal aorta.

DR. GEORGE ROSS said that a year ago he had seen this patient, and had carefully examined him for aneurism, but there were absolutely no physical signs to be found. Suspecting, however, that the severe and persistent pain was due to the pressure of an aneurism, he kept the patient in bed and put him on large doses of iodide of potassium, with the result of almost entirely

relieving his pain. This confirmed his diagnosis of aneurism.

CASE OF BRAIN INJURY DUE TO ENTRANCE OF A TIN PEA-SHOOTER THROUGH THE ORBITAL OPENING.

Dr. Casey Wood related the following case: R. R., aged four years, was running along the street, holding in his hand a tin pea-shooter, three-eighths of an inch in diameter and eighteen inches long. He fell and struck his head against the end of the tube when held upright in his hand. The hollow cylinder passed through the left lower eyelid, about a quarter of an inch from the margin of the orbit, and penetrating two and three-quarter inches, inflicted an injury to the brain. The tube was with difficulty withdrawn by a passer-by, who noticed upon the end of it some putty-like substance mixed with blood.

The accident occurred on the 10th of May, about ten o'clock A. M., and when the child was seen shortly afterward he was unconscious. There were extensive contusion and œdema of tissues surrounding wound. The left pupil was dilated, with no response to light; the right pupil was normal and responded to light. The pulse was very weak and slow. Vomiting almost constant. Respiration was labored and slow. The child was pale and restless, and the vomiting continued during the day. There were slight proptosis, complete motor and sensory paralysis of right side, with convulsive movement of right arm and leg—these movements being chiefly marked in right arm. The convulsive movements continued all day, and for a time before they ceased there was simply spasm of right arm. Child was unconscious at 9 P M. Temperature, 100° F.

Dr. Wood advised the parents to have the useless eyeball removed, so as to establish proper drainage from the cerebral wound, but this was refused. He attempted to keep wound open by introducing a probe, and inserting a drain of cotton, which, however, proved inefficient.

There was much inflammatory action about the orifice of the wound, and the eye was involved. A week after the accident, the patient had a distinct return of consciousness, which lasted a day or two. Ten days after, the patient became comatose, and died on the 29th of May, nineteen days after the injury. Dr. Wood was unable to obtain leave to make a post-mortem examination, but thinks there is little doubt that the track of the wound, after piercing the left lower eyelid, extended from a point midway between the outer and inner angles of the foramen, destroyed the nerve, and passed through the roof of the orbit, and entered the brain near the fissure of Sylvius. The author went on to say that there was no doubt that the patient died of septic meningitis, and thought it a matter for regret that the proper treatment, viz., enucleation of the eyeball, cleansing the wound, and establishing a deep drain, was not carried out, because of the objection made by the parents.

Dr. Shepherd thought, with Dr. Wood, that the only hope of recovery in these cases was the proper cleansing and drainage of the wound, and keeping the parts perfectly aseptic. He related a case of injury to the skull, due to a kick of a horse, where there was an extensive depressed fracture; the brain could be seen pulsating. As there were no symptoms of compression, Dr. Shepherd had treated the wound antiseptically; the bandage was put on firmly, and within a few minutes the patient had a severe epileptiform convulsion, and lost consciousness. On removing the bandages, the patient recovered and had no more fits, and the wound healed rapidly. When last seen, five months after the injury, the patient was perfectly well. The slight extra pressure caused by the bandages was sufficient to produce grave symptoms.

NEW INVENTIONS.

A NEW SERIES OF METRIC TEST-LETTERS AND WORDS FOR DETERMINING THE AMOUNT AND RANGE OF ACCOMMODATION.[1]

By CHARLES A. OLIVER, M.D.,

one of the Ophthalmic and Aural Surgeons to St. Mary's Hospital, Philadelphia, etc.

This set of reading-types has been made upon the same basis that governed the test-types presented at last year's meeting of the Society. By reason of this conformity an examination of acuteness of vision and accommodative action by means of these two series serves to place the results upon a uniform and proper foundation. The following advantages over other reading-types may be claimed:

First, the Letters. The Snellen block letter has been preserved.

Second, the Character and the Arrangement of the Words. The letters C D E T O L F are made into words of one or two syllables, and placed in columns. They are so arranged that a word composed mainly of vertical and horizontal strokes is followed by a word made of a majority of curved lines, no matter in what vertical or horizontal direction the columns may be read.

Third, the Sequence. The smallest type is placed first, each increasing type following in succession, until one equivalent to two dioptrys is reached, which finishes the card, leaving but a half dioptric separation between this card and the large one.

Fourth, the Interspace. Each word and letter is surrounded by a space equal to or greater than its own area, thus preventing any letter or word from being confounded with its neighbors.

Fifth, the Gradation. The following sizes are employed: 0.25 D., 0.50 D., 0.75 D., 1 D., 1.50 D., and 2 D.

Sixth, the Construction. The letters are phototypes. The card is made of heavy neutral gray cardboard, with rounded corners. The letters are printed upon a sunken surface, thus keeping them free from dirt by contact through handling, or by the card being placed upon dirty surfaces.

James W. Queen & Co., of 924 Chestnut Street, Philadelphia, have kindly superintended the construction of the cards, and to them the author here desires to express his thanks for careful and satisfactory work.

[1] Abstract of a paper read before the American Ophthalmological Society, July 22, 1886.

NEWS ITEMS.

PARIS.

(From our Special Correspondent.)

TREATMENT OF GLAUCOMA.—At a recent meeting of the Academy of Medicine, M. Panas spoke in high terms of a new therapeutic remedy suitable to some forms of glaucoma. Eserine, though one of the most active myotics, cannot always be endured, and pilocarpine in some respects is preferable, although less active. The different collyria which are used are composed either of five centigrammes of eserine to five grammes of water, or of ten centigrammes of pilocarpine to five grammes of water. The improvement is very rapid, but in order to obtain a cure, one of these collyria must be used for several months. When first used, five or six instillations should be administered in twenty-four hours, afterward gradually decreasing the applications to one or two instillations *per diem*. Those forms of glaucoma in which this treatment has proved beneficial are precisely those in which iridectomy or sclerotomy has been inefficacious.

CONNECTION BETWEEN NOISES IN THE EAR AND STOMACH AFFECTIONS.—Dr. E. Ménière, in an article in the *Revue de Laryngologie et d' Otologie*, mentions the frequent connection which exists between noises in the ear and stomach affections. Dyspeptic or gastralgic patients suffering from these complaints are very numerous. In some cases dyspnœa is accompanied with noises without the hearing being in any way affected. In those cases where there is no aural lesion the cause of the symptoms should be sought for in the internal ear, and it will be found that some connection exists between complaints of this kind and vertigo of the stomach. The noises in the ear vary, sometimes resembling whistling, boiling water, but never the isochronous beatings of the pulse. Otologists should, therefore, carefully find out, when patients complain of noises in the ear and deafness, whether this state is not due to disturbance of the digestive organs. Noises in these cases are more frequently noticed during the second or third year, and even later. According to M. Ménière, they affect only one ear. M. Leden speaks of having met with cases in which both ears are affected. When considerable deafness occurs, it is often incurable; under these circumstances increase or decrease of noises is, in some cases, identical with the dyspeptic state of the patient. Local remedies give, as a rule, very poor results; the most rational course is to treat perseveringly the stomach affection, which undoubtedly is the origin of these complaints, which are at once painful and liable to bring on serious disorders. In some cases the lesions of the internal ear, although not serious, may prove sufficiently lasting as to determine the persistence of noises which are more or less noticeable.

HYSTERIA IN THE ARMY.—The question of male hysteria is one of great interest to army physicians. They have frequently to diagnosticate simulated hysteria and epilepsy. In some cases the diagnosis is easy, as the phenomena are identical with those of female hysteria, but these cases are exceptional, military hysteria presenting, as a rule, milder aspects. When stigmata appear in persons subject to epileptic fits, a positive diagnosis is indicated; in less evident forms it is more difficult to arrive at a definitive diagnosis. In order to determine the nature of the nervous disturbance of the patient, a careful examination should be made to detect any of the sensitive and sensorial modification or any of reflex action, suppression of pharyngeal reflex action, persistence of reflex action in the tendons. Also, if electro-muscular contractility is preserved whether, there is perversion of the muscular sense. Furthermore, a military doctor must be able to detect hysterical paralysis which may be occasioned by traumatism. This kind of paralysis is not included in those diseases which give the right to retire from service, but only enables the patient to obtain a sort of renewable pension, so that besides the scientific interest which the disease presents, physicians should study it from an economical point of view and thus be on their guard against deception and also against faults in the diagnosis. The diagnosis is more difficult when the hysterical patient is clever at deception or under the influence of an undue indulgence in alcohol or absinthe. M. Emile Duponchel has written a book entitled *L'hystérie dans l'Armée*, which exhaustively treats the subject.

PASTEUR'S CRITICS.—A Paris correspondent of the London *Standard* says: "After having been the idol of an hour, and after seeing the French in their enthusiasm subscribe a large sum of money for the establishment of an institution which is to bear his name, M. Pasteur is now becoming the object of virulent attacks. It is chiefly among the radicals, and those whose scientific knowledge is very limited, that M. Pasteur's detractors are to be found. A certain number of doctors have, it is true, recently pronounced against the efficacy of his treatment against hydrophobia; but the great majority of the medical faculty reserve their judgment for the present. Dr. Lallier, one of the medical celebrities of Paris, in a long conversation I had with him on the subject, spoke in the highest terms of the patient researches which have already enabled M. Pasteur to make valuable discoveries. As for M. Pasteur's good faith, Dr. Lallier has not the slightest doubt, for he is well acquainted with him, and is quite sure that he would never affirm anything unless he was himself perfectly convinced of its truth. Though Dr. Lallier admits that the inoculations appear to have protected those who followed M. Pasteur's treatment from hydrophobia, at least in the great majority of cases, he nevertheless holds it necessary not to pronounce definitely in favor of that treatment, and for the following reasons: First, because sufficient time has not yet elapsed since the first person was inoculated by M. Pasteur to prove that the germ of hydrophobia has been destroyed or rendered innocuous. But that is not Dr. Lallier's main reason for refusing to pronounce on M. Pasteur's treatment. He pointed out to me that there was an obscure point which rendered that treatment a mystery. When a person is vaccinated against smallpox a virus is introduced into his system which gives him the disease in an attenuated form. The vaccine, to use the word commonly employed, 'takes,' and the vaccinated person has a certain amount of fever. In the case of persons being vaccinated against smallpox, after they have already been attacked by that disease, Dr. Lallier affirms that till now there has been no

proof forthcoming to show that the intensity of the attack of smallpox is diminished by the vaccination. M. Pasteur's treatment, therefore, puzzles him, for, when inoculated by M. Pasteur, the patient has only the germ of hydrophobia in his system, but the liquid substance which is introduced into his body has no apparent effect —that is to say, the patient is not in the least ill, and does not suffer from even the attenuated symptoms of hydrophobia. By vaccination the patient is given smallpox in a mild form when he has not the germ of that disease; whereas when a person is inoculated against hydrophobia he has already the germ of that disease, and is not given it in any form whatever."

UNUSUAL SUICIDE.—Mr. William Allen reports, in the *Dublin Journal of Medical Science* for March, 1886, a case of a prisoner who, on being informed that his wife had just been arrested, started off at full speed toward a wall some fifty feet away, and dashed the vertex of his head against it. So great was the concussion that the body rebounded three feet from the wall, and the man dropped dead without a struggle. The case is of interest from a medico-legal point of view, as had the man not been seen by witnesses to commit suicide, it might reasonably have been supposed that he had been struck by a keeper, or a fellow convict.

DIET TABLES.—We have received from Messrs. Reed & Carnrick, of New York, a series of diet tables for use in the more common diseases, the lists being arranged in a manner convenient for removal and presentation to the patient. No such list can be complete, nor yet of universal application, but the one before us is a very creditable attempt and will often be found useful.

EFFECT OF WIND ON TRAPS.—The *Plumber and Decorator* cites a case where the seals of traps were affected by a high wind. The house in question was two stories high, with a basement; the horizontal soil-pipe was about thirty feet long from a running-trap to where it joined the vertical soil-pipe, which was forty-five feet high, carried well up above the ridge of the roof and about ten feet distant from it. On the basement, the first and the second floors were the usual fixtures, each with its own branch from the soil-pipe. The fresh-air inlet was two inches, the soil-pipe four inches, open at the top. The closet has a short hopper, and most of the traps were S-traps, with five-inch seals and no vents. Although the discharge of any fixture in the house has scarcely any effect on the seal of the traps of any other fixture, yet the wind caused a fluctuation of nearly one and one-quarter inches. There was no more wind than might occur occasionally in an ordinary season. The observer purposes to try the effect of ventilating-caps to see if they will prevent the fluctuation of water in the traps caused by wind.

A similar case occurred some years ago at Roxbury, Mass. In this case the soil-pipe extended above the roof, but there was no air-inlet on the house-drain. When the wind was blowing strongly the seals of the traps in the bath-room were disturbed, and an experiment showed that the air in the soil-pipe was rarefied, producing a suction tending to break the trap-seals. In this case the want of an air-inlet seemed to be the cause. In the English case the air-inlet was probably too small when the great length of soil-pipe was taken into consideration.

MINNESOTA OPIUM.—During the year 1885, Emil Weschke experimented on the cultivation of different species of Papaver at New Ulm, Minn., and from the unripe capsules of P. somniferum prepared a quantity of opium which, in the air-dry condition, contained 2.8 per cent. of moisture, and, after drying, yielded 15.23 per cent. of morphine, 0.325 per cent. of narcotine, 0.416 per cent. of codeine, and 3.5 per cent. of meconic acid. The author does not believe that the cultivation of the poppy for the production of opium in this country would be attended with profit.

SURGEON BARBERS.—The *Boston Post* says that "barbers were originally surgeons," and adds, apparently with much feeling, "a great many of them are now."

MILK AND THROAT DISEASE IN CANTERBURY, ENGLAND.—The medical officer of health of Canterbury has reported a sudden outbreak of throat disease, which, in eight days, attacked no less than 231 persons, without fatal effects in any instance. So far as can be judged, the epidemic was due to milk, for of 160 houses served from the dairy which is in suspicion no less than 94 were affected, and, so far as can be gathered, out of 36 houses partly supplied from the same dairy and partly by other milkmen 21 were affected. In the other instances of houses affected the persons in question seem almost exclusively to have been those who were either attacked late during the outbreak, and under circumstances which admitted of their having derived the infection from antecedent cases, or else persons who may easily have partaken of the suspected milk elsewhere than in their own homes. So far, says the *Lancet*, the reports on the case are, we trust, incomplete, for by far the most interesting feature of the case is the implied sickness of animals in connection with the outbreak, and the history as to this is as yet very imperfect. Indeed, we only learn of a lamb in the suspected dairy premises having suffered from "sore throat," and of cows having had "diarrhœa." The connection now established between disease in the human subject and affections of a specific character in lower animals, and especially in cows, is of far too great importance to admit of such a case being passed over by such vague accounts in so far as these animals are concerned. It is to be hoped that skilled veterinary and pathological aid was secured, either through the Local Government Board or otherwise, and that a more complete report will be issued.

MEDICAL INSTINCT IN ANIMALS.—Animals get rid of their parasites by using dust, mud, clay, etc. Those suffering from fever restrict their diet, keep quiet, seek dark, airy places, drink water, and sometimes plunge into it. When a dog has lost its appetite, it eats that species of grass known as dog's grass, which acts as an emetic and a purgative. Cats also eat grass. Sheep and cows, when ill, seek out certain herbs. An animal suffering from chronic rheumatism, always keeps, as far as possible, in the sun. The warrior ants have regularly organized ambulances. Latreille cut the antennæ of an ant, and other ants came and covered the wounded

part with a transparent fluid secreted in their mouths. If a chimpanzee is wounded, it stops the bleeding by placing its hand on the wound or dressing it with leaves and grass. When an animal has a wounded leg or arm hanging on, it completes the amputation by means of its teeth. A dog on being stung on the muzzle by a viper was observed to plunge its head repeatedly for several days into running water. The animal eventually recovered. A sporting dog was run over by a carriage. During three weeks in winter it remained lying in a brook, where its food was taken to it. This animal recovered. A terrier hurt its right eye. It remained under a counter, avoiding light and heat, although it habitually kept close to the fire. It adopted a general treatment, rest, and abstinence from food. The local treatment consisted in licking the upper surface of the paw, which it applied to the wounded eye; again licking the paw when it became dry. Animals suffering from traumatic fever treat themselves by the continued application of cold water.

PROVIDING FOR THE FAMILY OF PROFESSOR VON GUDDEN.—A gratuity of £10,000 has been granted from the Bavarian Civil List to the widow of Professor von Gudden, of Munich, who perished with the late King of Bavaria in the lake at Castle Berg. He left a family of eleven children.

CONSUMPTION OF TOBACCO IN EUROPE.—M. Paul Leroy-Beaulieu, writing in the *Economiste Français*, gives the following figures, showing the quantity of tobacco consumed in the different countries of Europe, and the rate per 1000 inhabitants: Spain, 110 pounds; Italy, 128 pounds; Great Britain, 138 pounds; Russia, 182 pounds; Hungary, 207 pounds; France, 210 pounds; Denmark, 224 pounds; Norway, 229 pounds; Austria, 273 pounds; Germany, 336 pounds; Holland, 448 pounds; and Belgium, 560 pounds.

A CASE OF RABIES cured by hypodermatic injections of corrosive sublimate and atropine is reported by DR. DE PIETRA SANTA, in the *Journal d'Hygiene*. The man was bitten by an undoubtedly rabid dog, and developed symptoms of hydrophobia two and a half months later.

LARGE BEQUEST TO A WESTERN MEDICAL COLLEGE.—The late Samuel Ensworth has bequeathed a sum of about $100,000 in trust for the erection and maintenance of the St. Joseph Medical College and a hospital to be erected in St. Joseph upon such a site as may be selected.

A NEW DISINFECTING COMPOUND for purifying the atmosphere of the sick-room has just been presented to the Berlin Medical Society. Oils of rosemary, lavender, and thyme, in the proportion of 10, 2½, and 2½ parts respectively, are mixed with nitric acid in the proportion of 30 to 1½. The bottle should be shaken before using, and a sponge saturated with the compound and left to diffuse by evaporation. Simple as it is, the vapor of this compound is said to possess extraordinary properties in controlling the odors and effluvia of offensive and infectious disorders.

THE TWINS OF LOCANA, who have been shown in almost every town of Europe as the successors of the renowned Siamese twins, are at present dying in Vienna, or at least are very ill. These twins, now aged ten, are united from the sixth rib downward. They have but one abdomen and a single pair of legs. One of these is under Jacob's control; the other, under that of John. They cannot walk, and cannot easily keep their balance. One is much stronger and healthier than the other, and eats more; it is Jacob, and he keeps his brother alive. Some time ago both quarrelled over a toy, and John got so excited that he fell into a state of syncope, or trance, from which he did not recover till the next day. He had already had an illness of the same kind, and Virchow, of Berlin, had prognosticated that a second one would kill him. This, Jacob knew well; so, of course, the illness of his brother (an apparently lifeless body) gave him all the more concern, since the death of his brother would but shortly precede his own. The physicians are doing their best to save the unfortunate children. Of course, no operation can be thought of in the present case. Even in that of the Siamese twins, there were great difficulties attending a surgical intervention; and, before it was resolved to intervene, death had already done its work. If the twins recover they will go to the States, where they were engaged, it is said, at the rate of $6000 per year; if not, their skeleton is already promised to a London anatomical museum for eight thousand pounds.

VALUE OF LIFE.—DR. CHARLES L. DANA discusses in the *Forum* the question, "Is life worth saving?" He places the value of an adult life to the State at at least $750, and its annual productive power at $95. One-half of all the deaths occur during the productive age, so that the 200,000 deaths at this period, which occur annually in the United States, represent an enormous loss to the country. It is also calculated that every death represents about two years of sickness, and that there are in this country about 1,500,000 persons sick all the time. In England and Wales it has been found that every workingman averages a week and a half of sickness in the year. It is estimated that the wage-loss from sickness in France is $70,000,000 each year, and from death $188,000,000.

FOOD ADULTERATION.—In an examination of foods by the chemists of the Massachusetts Board of Health, the following forms of adulteration were of most frequent occurrence:

Milk—addition of water or coloring matter, and abstraction of cream.

Butter—substitution of foreign fats, and addition of coloring matter.

Spices—addition of starch and other foreign powders. Especially true of pepper and mustard.

Cream of tartar—substitution of starch, gypsum, and other cheaper substances.

Baking powders—alum and other injurious ingredients. Baking powders have no legal standard, other than that of freedom from harmful ingredients.

Lard—presence of cheap fats and oils.

Olive oil—substitution of cheaper oils.

Jellies and preserved fruits—Substitution of cheaper fruits, and addition of coloring matter.

Vinegar—absence of the required amount of acetic acid, and addition of coloring matter.

Honey—substitution of cane sugar, glucose, and other substances.

Molasses—addition of glucose, presence of tin or other foreign substances.

Sugar—glucose, poisonous coloring matter.

Maple sugar and syrup—glucose.

Confectionery—terra alba, poisonous coloring matter, fusel oil, arsenical wrappers, etc.

Coffee—mixture or substitution of various cheaper substances.

Canned fruits, vegetables, and meats—metallic poisons.

THE DRUG CLERK.—The most satirical shot at illegible prescriptions that we have yet seen is the following from the *Medical Age:*

A gentleman received a note from his lawyer which he was unable to decipher. On his way to his office he met a friend at the door of a drug store. The friend, after vainly attempting to read the note, suggested that they step inside and hand it to the druggist, without comment. The druggist, after studying it in silence for a few minutes, stepped behind his prescription case, and in a short time returned with a bottle of medicine, duly labelled and bearing directions. When the gentleman saw his lawyer, he was informed that the note was a notice for him to call at his office between three and four P. M. of the following day. It is a pretty difficult matter to "stick" the regulation druggist.

THE SEVENTEENTH ANNUAL SESSION OF THE MEDICAL SOCIETY OF VIRGINIA, will be held at Fredericksburg, Va,. October 26, 1886.

HYDROPHOBIA IN 1806.—It has recently come to light that the State of New York, in 1806, paid to John M. Crous a thousand dollars for a remedy against hydrophobia which he considered infallible. The measure was advocated by DeWitt Clinton and Chancellor Kent. This remedy consisted of one ounce of the jaw-bone of a dog, burned and pulverized; the false tongue of a newly foaled colt, dried and pulverized; and a "scruple of verdigreas," raised on the surface of old copper by laying it in moist earth. The warrant of the Comptroller on which the money was paid, and the receipt of Crous, are on file with other State papers at Albany.

THE MALE NIPPLE.—During the late war, at a period when the success of the Union cause was pretty well assured, President Lincoln was invited by some distinguished engineers of the army to inspect a plan which had been drawn for a very elaborate and expensive system of defence for the City of Washington. After examining the drawings attentively he inquired what was the necessity for the works. "The defence of the capital," was the reply, "in the contingency of a Confederate invasion." The President thereupon was reminded of a story of a debating society of a Western town, where the question was discussed, "Why does a man have breasts?" Several nights of debate failed to elucidate the problem until the matter was submitted to a referee, who decided "that if, under any circumstances, however fortuitous, or by any chance or freak, no matter of what nature, or by what caused, a man should have a baby, there might be breasts to nurse it."

PRESIDENT GRÉVY, now nearly eighty years of age, lost his first tooth the other day. The Paris journals mention the fact as an event, and *Le Voltaire* regards it as an event of grave political significance. "Good teeth," says *Le Voltaire*, "are essential to good digestion, and bad digestion have played a great *rôle* in the history of kings and rulers. It is lucky for us," it continues, "that President Grévy has such sound teeth. To that fact must be attributed his unchanging calm, his ataraxy, the perfect equilibrium of his physical and intellectual functions, which have made him the most prudent of statesmen, and the most constitutional of presidents."

THE FRENCH ACADEMY OF MEDICINE PRIZES FOR 1887.—The arrangements for the prizes offered by the French Academy of Medicine for competition during 1887 are as follows: The Academy Prize (10,000 francs): "Vaginal Hysterectomy, the Indications and Operative Procedures." The Argenteuil Prize (10,000 francs); this prize, which is sexennial, will be awarded to the author of the most notable improvement in measures for the cure of urethral strictures, or to the author of the best work on the treatment of other diseases of the urinary passages. The Barbier Prize (2000 francs) will be given to the discoverer of the most efficient means of curing diseases considered incurable, such as rabies, cancer, cholera, etc. "Encouragement" may be accorded to those who come nearest to attaining the object without actually accomplishing it. The Henri Buignet Prize (1500 francs) is for the best written or printed work on the applications of physics or chemistry to medicine. Foreigners are not allowed to compete for this prize. The Capuron Prize (1000 francs): "Post-partum Involution, the Changes and Pathological States which result," The Civrieux Prize (1000 francs): "Vesical Neuralgias." The Daudet Prize (1000 francs): "Actinomycosis." Authors must present original observations made in France. The Desportes Prize (1200 francs) for the best work on "Practical Medical Therapeutics." The Ernest Godard Prize (1000 francs), for the best work on "External Pathology." The Hygiene of Infancy Prize (1000 francs): "A Clinical Study of Athrepsia." The Laval Prize (1000 francs), for the most meritorious medical student. The Lefèvre Prize (2000 francs): "On Melancholia." The Auguste Monbinne Prize (1500 francs) is a fund to be expended for scientific missions, etc. The Portal Prize (600 francs): "On Primary Renal Tuberculosis." The Saint-Lager Prize (1500 francs), for experiments to produce goitre in animals by administering substances extracted from the water or earth of goitrous regions. The prize will not be awarded unless the experiments have been successfully repeated by the Academy's commission. The Vernois Prize (800 francs), for the best work on hygiene. Competing essays for all these prizes must be sent to the Academy before May 1, 1887, written in French or Latin, accompanied by a sealed envelope and a device to identify the author. The condition of concealment of the author's name does not apply to competitors for the Argenteuil, Barbier, Buignet, Desportes, Godard, Monbinne, and Vernois prizes.

A BALD AND TOOTHLESS FUTURE.—In the October number of the *Popular Science Monthly*, MR. V. G. EATON writes under this caption, and from his paper the following extracts are made:

In most of the Eastern cities, fully thirty per cent. of the men over thirty years of age show unmistakable signs of baldness, while nearly twenty per cent. have spots on their heads that are not only bald, but actually polished with the gloss that is supposed to belong to extreme old age alone. I have been in the majority of the churches and theatres in all the large Eastern cities, as well as in Chicago, St. Louis, and other places of the West, and have verified my assertion by actual count. From my observation I find that bald-headed men are most plentiful in New York and Boston. After these come Philadelphia, Washington, and the Western towns.

Here are a few observations taken in Boston. Trinity Church: 243 men; 71 actually bald, 46 indications of baldness. King's Chapel: 86 men; 38 actually bald, 14 indications of baldness. Hollis Street Theatre, orchestra, at performance of the "Mikado:" 63 men; 27 actually bald, 10 indications. Boston Theatre—Judic: 126 men; 51 actually bald, 43 indications.

These observations were taken from the more cultivated classes of society, and do not give a fair representation of the Boston head, as repeated calls at the dime museums and cheaper variety performances demonstrated. For instance, of the thirty men seen in the seats of the World's Museum in Washington Street, but eight were bald, while only five others had thin hair, showing that baldness was simply a question of a very few years. Again, of forty men at Austin and Stone's Museum, twenty-two had their heads well covered; and at the Windsor Theatre (variety) I found less than twenty-five per cent. who had thin hair.

On the other hand, at shows and entertainments of more refinement, the bald-headed element was considerably larger. Of two nights when Patti sang at the Boston Theatre there were forty-six per cent. of bald heads on one occasion, and forty-two on the other. When De Lussan appeared in "Fra Diavolo" I discovered thirty-eight per cent. of baldness, and at one of Matthew Arnold's lectures there were forty-six per cent. In fact, out of hundreds of observations, extending over several years, I have found that the higher the price of admission, and presumably the more refining nature of the performance, the larger the per cent. of bald heads. One night I counted the occupants of a few settees in my immediate vicinity at an exhibition which John L. Sullivan gave at the Mechanics' Fair Building, and was surprised to find that less than twelve per cent. of the men were bald. As this was a show where the spectators had the privilege of retaining or discarding their hats at pleasure, I think it was not a fair test.

The same rule can be applied to the early decay of human teeth, and with the same results. Old men now living tell of a time when dentists were almost unknown. The family physician used to keep a pair of forceps and tooth-keys to pull out such teeth as insisted on aching for an unreasonable length of time, while the idea of false teeth was so strange that the person who had a set was an object of curiosity for the whole neighborhood. Now nearly half the people over twenty years of age have one or both jaws occupied by artificial teeth, and the sign of the dentist occupies a conspicuous place on many a street corner.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 28 TO OCTOBER 4, 1886.

GIBSON, JOS. R., *Major and Surgeon.*—Granted two months' leave of absence, from September 25, 1886, on surgeon's certificate of disability, in lieu of the unexpired portion of the ordinary leave of absence granted him in S. O. 158, A. G. O., July 10, 1886.—*S. O. 227, A. G. O.*, September 30, 1886.

GARDNER, WM. H., *Major and Surgeon.*—Ordered from the Department of Texas to the Department of the East.—*S. O. 227, A. G. O.*, September 30, 1886.

WALES, PHILIP G., *First Lieutenant and Assistant Surgeon.*—Leave of absence extended to include November 5, 1886.—*S. O. 226, A. G. O.*, September 29, 1886.

KENDALL, WM. P., *First Lieutenant and Assistant Surgeon.*—Granted leave of absence for one month.—*S. O. 81, Division of the Pacific*, September 24, 1886.

MASON, CHAS. F., *First Lieutenant and Assistant Surgeon.*—Ordered for temporary duty at Fort Verde, Arizona Territory.—*S. O. 90, Department of Arizona*, September 20, 1886.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING OCTOBER 2, 1886.

GUITERAS, D. M., *Passed Assistant Surgeon.*—To Receiving Ship "Franklin," for temporary duty, October 3d.

WENTWORTH, A. R., *Assistant Surgeon.*—Detached from the Navy Yard, League Island, and to the U. S. S. "Galena," October 1st.

SCOTT, H. B., *Assistant Surgeon.*—Ordered to Navy Yard, New York, October 1st.

ASHBRIDGE, RICHARD, *Passed Assistant Surgeon.*—Detached from the U. S. S. "Swatara," October 1st. Granted six months' leave.

BERRYHILL, T. A., *Assistant Surgeon.*—Detached from the Museum of Hygiene, and ordered to Receiving Ship "Minnesota."

ARTHUR, GEORGE, *Passed Assistant Surgeon.*—Detached from the Navy Yard, New York, and ordered to the Museum of Hygiene.

PERCY, H. T., *Passed Assistant Surgeon.*—Detached from U. S. S. "Galena," proceed home, and wait orders.

SHAFER, JOSEPH, *Assistant Surgeon.*—Detached from the U. S. S. "Minnesota," and ordered to the U. S. S. "Swatara."

STEELE, J. M., *Passed Assistant Surgeon.*—Detached from the Naval Academy, and granted six months' leave.

BIDDLE, CLEMENT, *Passed Assistant Surgeon.*—Ordered to Naval Academy, Annapolis, Maryland.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FOR THE WEEK ENDING OCTOBER 2, 1886.

PURVIANCE, GEORGE, *Surgeon.*—Granted leave of absence for twenty-five days, September 30, 1886.

STONER, G. W., *Surgeon.*—Granted leave of absence for twenty-three days, October 1, 1886.

CARTER, H. R., *Passed Assistant Surgeon.*—To proceed to Galveston, Texas, as an inspector, September 30, 1886.

AMES, R. P. M., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, to take effect when relieved, September 30, 1886.

WASDIN, EUGENE, *Assistant Surgeon.*—Ordered to examination for promotion, September 30, 1886.

BROOKS, S. D., *Assistant Surgeon.*—Granted leave of absence for thirty days, to take effect when relieved, September 30, 1886.

WILLIAMS, L. L., *Assistant Surgeon.*—Relieved from duty at Mobile, Alabama. Ordered to Marine Hospital, Wilmington, North Carolina, September 27, 1886.

PERRY, T. B., *Assistant Surgeon.*—Relieved from duty at San Francisco, California. Ordered to Marine Hospital, St. Louis, Missouri, October 1, 1886.